



SPARKS JOURNAL

★ ★ ★ SOCIETY OF WIRELESS PIONEERS, INC ★ ★ ★

VOLUME 6, NO. 1 [JUNE 1983]

VOLUME 6, NO. 1 (SEPT. 1983)

AVIATION RADIO [2]

Pickerill Demonstrates



The Indispensable Value of Radio

to Commercial Flying



Orville Wright said "It can't be done!"



Elmo Pickerill made a new first!!



In an age of Moon landings, space shots and solar orbits, the pioneer days of aviation sometimes seem to belong to a past that has little meaning in the present.

It is with a trace of nostalgia we recall that one of America's most outstanding "brass-pounders" . . . ELMO NEALE PICKERILL of Mineola, New York became the FIRST INDIVIDUAL to communicate from an aircraft to both ship and ground stations using C. W. code.

The date was August 4, 1910 when "Pick" (some called him "PK") made his historical flight which took him on a round-trip from Mineola to Manhattan Beach, Brooklyn non-stop in a Model "B" Wright biplane. The flight was made at an altitude of only a thousand feet. During the flight he established contact using a "push button" telegraph key with seven different stations - three of them being wireless stations aboard ships in the New York area, two coastal stations, a portable station at Manhattan Beach and a station in New York City.

The establishment of two-way communications between sky and ground was one of the great achievements of science, yet not widely recorded in 1910 when the citizens of the world were not very air-minded. "Pick" was one of the early day "greats" in the wireless communications field. During his life he had worked with Dr. Lee de Forest in establishing stations throughout the USA. He also worked with Marconi and had many direct contacts with Nikola Tesla, Picard, Fessenden and John Stone to name a few.

He was not a pilot, not until the obsession of experimenting to find out if wireless in an aircraft would work left no alternative but to learn to fly and learn to fly he did. It took two short months before his historic record "first".

"Pick" had met Orville Wright in 1909 and asked if he could rent one of his machines and a pilot so he could go aloft to conduct experiments with his wireless apparatus. Wright scoffed at the idea, telling Pick there was no airplane with sufficient power to fly two men plus a load of wireless equipment . . . it just couldn't get off the ground! He made arrangements for lessons with the Brothers Wright thinking the weight of the second man displaced would enable him to carry his wireless gear . . . and so it worked out.

[Continued to Page 8]

ELMO NEALE PICKERILL at the 'prop' of his FOKKER 'Super- Universal Airplane which was provided by the Radiomarine Corporation of America, 66 Broad Street, New York. "Pick" held a Transport Pilots License as well as his Extra First Class Radio Operators License.

The plane was used for both sales and public relations work with RCA. Thomas Coke Knight - Photographer.

Many Society Members Helped Pioneer Aviation



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Founded 1968 by William A. Brennan

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**AVIATION ISSUE
PART TWO**

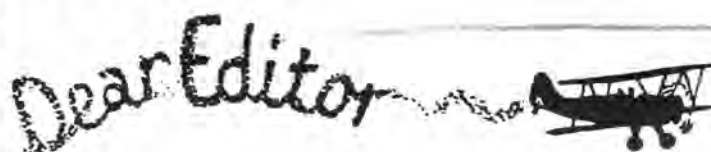


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Next Edition



SOME MORE STRAIGHT ANSWERS TO YOUR UNASKED QUESTIONS:

I mentioned the huge input of material received from members in this last column. Many additional stories and data were received during the quarter following publication and we still have many unpublished articles ready to print. Many think it was the best yet !

We know many of our members started their careers as ship operators, etc., but after a period of ten years or so aboard ships and wanting to get married, transferred to the many jobs offered by airlines and government circa the 1930's, hence their interest in aviation issues.

I do not think we can let one mode or service take over, hence we will return in the next issue with about 75 per cent of coverage devoted to Marine, Land Stations and non-airways subjects. HOWEVER, for those who did not have their stories published in the current issue, we will use about 25 per cent of our space to carry additional articles on Aviation Radio, so please do not feel that your efforts have been in vain.

Included in coverage next issue, will be a historical review of the early Canadian Stations in their Maritime Provinces. Several other over-seas stories will be included.

FLYING WORLD AIRWAYS

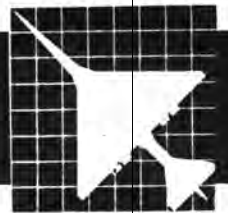
Early Days of The Wireless - A Historical Record



AVIATION



PIONEERS



Founders Page



WILLIAM A. BRENIMAN

Getting out a copy of SPARKS JOURNAL is like scrubbing an elephant -- there's no good place to begin or end and its hard to keep track of what you've already covered.

I think we must have scrubbed harder or covered more surface as we seemed to 'hit the jack-pot'. At least it triggered the largest input of mail yet . . . and all quite laudatory. Must be a lot of fellows out there who worked in the aviation radio business some time or another.

Guess I must have been in the right place at the right time as I EOD in the Civil Airways in 1929. Had I joined 6 months earlier I might have gone 'further-faster'. As it was, I was quite content with the prospects of being in on the 'ground floor' of a coming industry that seemed to be taking hold in our country.

When I joined the Aeronautical Section of the Bureau of Lighthouses, Department of Commerce there were 178 employees on the payroll. I made it No. 179. When I went to Washington as Deputy Chief of the CAA Communications Division we had some 4400 employees in our field and staff positionsthe largest gathering of radio men outside the military that ever worked for one organization.

We had our counterparts in Industry. The Airlines expanded during the "Golden Years" of aviation and with it the number of men and women who worked in communications.

As time went by, we changed from a "CW" outfit to voice and of course the teletypes took over the great bulk of weather traffic and reports. Many new electronic aids to navigation came along and we had to master the techniques of their use and operation.

When we first started, the Chief at each station (Airways Radio Stations we first called them) had to be qualified to operate and maintain all equipment at his facility. For most of us this was no problem but as time and added equipment was installed, maintenance specialists took over the care of facilities so operations personnel could devote their time to the demands of pilots and airmen for service. It might be noted that general aviation (private flying) increased greatly during the years and kept pace with the Airlines.

Pictured above is one of "Ye Ed" taken circa 1932 atop the hangar at Burbank Airport. He had just returned from Texas where he built and commissioned the station at Big Spring. Next stop was a relief assignment as Chief of the ARS Station at Lindbergh Field in San Diego. During this interim period, I was assigned the first Inspector position in the Service. Well, 50 years have gone by and I only wish I had the vim and vitality I had in those days but time takes its toll. MY DREAM: "String along with me - the best is yet to be" (Sung to the same tune as the song of the same name . CUL. [30]

Bill Breniman

Pioneer Aviation Organizations

AIR MAIL PIONEERS [Civis Aerius Sum]

This is an organization of those who worked in the Post Office Department - Air Mail Section between May 15 1918 and Aug. 31 1927 when turned over to USLH of Dept. of Commerce. Those who worked during this period are automatically members.



SOCIETY OF AIRWAY PIONEERS
2879 Blythwood Drive
Rancho Palos Verdes, CA
90274



Membership: Twenty years service in the FAA USWB or predecessor agencies. Fee \$1.00 initiation. Dues \$7 annually. Executive Secretary - Editor: Leon C. Daugherty

OX-5 AVIATION PIONEERS
207 Dormont Village - 2961 West Liberty Ave.,
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Flora Balmer - Office Mgr.



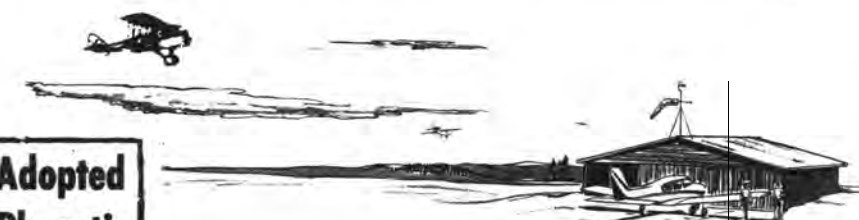
Membership: Limited to those who soloed, flew or owned an OX-5 powered aircraft prior Dec. 31 1940. Those who participated in the design, construction or maintenance also eligible.

OTHER PIONEER ORGANIZATIONS

Following are a few Pioneer Aviation organizations we know of but do not have addresses:



"QB's" Quite Birdmen
American Aviation Historical Society
USAF Historical Foundation
Society of WW1 Aviation Historians
Naval Records Club
New Jersey Aeronautical Historical Society
(Probably many more)

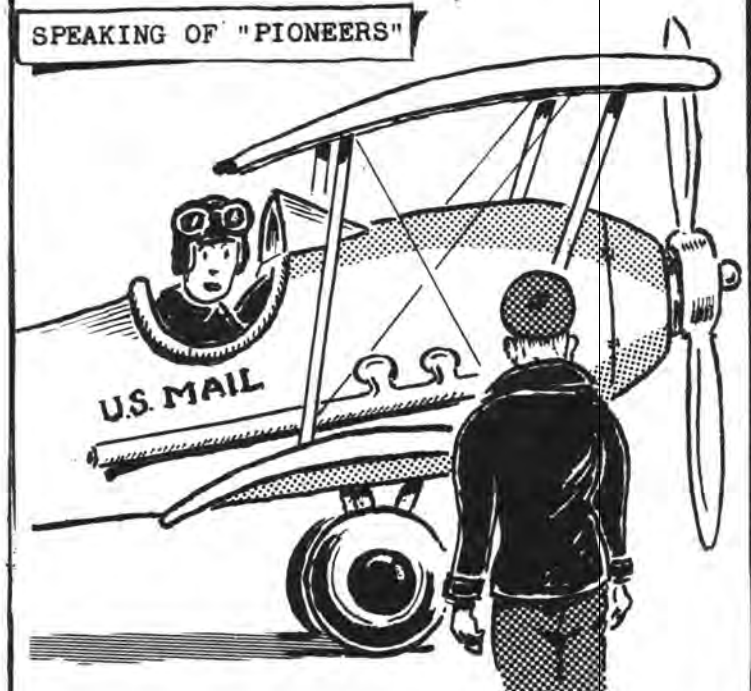


ARRL Adopted ICAO Phonetic Alphabet

(International Civil Aviation Organization)

- A ALFA
- B BRAVO
- C CHARLIE
- D DELTA
- E ECHO
- F FOXTROT
- G GOLF
- H HOTEL
- I INDIA
- J JULIETT
- K KILO
- L LIMA
- M MIKE
- N NOVEMBER
- O OSCAR
- P PAPA
- Q QUEBEC
- R ROMEO
- S SIERRA
- T TANGO
- U UNIFORM
- V VICTOR
- W WHISKEY
- X X-RAY
- Y YANKEE
- Z ZULU

SPEAKING OF "PIONEERS"



"I KNOW OUR RADIO CONTACT ENDED ABRUPTLY - THAT WAS WHEN I LEFT MY TRAILING-WIRE ANTENNA ON A TALL CORN CRIB IN IOWA."

Pioneering Civil Aviation in the United States

Editorial Comment



I am sure these pictures of early day aircraft will be enjoyed by many of our members who have been closely associated with them as "PRO's" or who have handled their flights by radio. In addition to the airplanes and aircraft pictures [Pages 4-7] there are many scattered throughout this issue. They helped to pioneer flying of air-routes in North America, especially US.

Regretfully, we receive only a few pictures from members outside of the U.S. We would have been pleased to have included both pictures and stories about the pioneer days of aviation radio in your home country. Perhaps we can include in later editions of Sparks Journal.

Credit Line: Many supplied by members. Others from carriers such as TWA, EAL, PAN AM, UAL, AAL, NWA, etc. Builders: Boeing, Douglas, Curtis, etc. Ye Ed supplied a large number from his personal collection. We hope you enjoy them.

William A. Breniman - Editor



SIKORSKY S-36



LOCKHEED LOADSTAR



SIKORSKY S-38



LOCKHEED ELECTRA



SIKORSKY S-42



LOCKHEED CONSTELLATION L-49



SIKORSKY S-41

Early Airplanes That Blazed the Way



CONSOLIDATED FLEETSTER



CONSOLIDATED CONVAIR 440



STINSON A - LOW WING



MARTIN 404



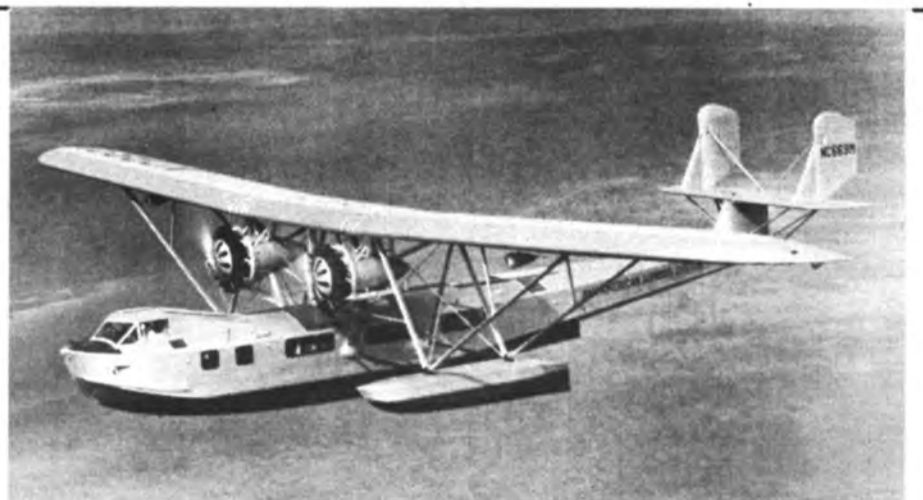
FAIRCHILD 71



FAIRCHILD PILGRIM 100-A



FAIRCHILD XA-942



CONSOLIDATED COMMODORE

From Diapers to Maturity



CURTIS FALCON



CURTIS C-46



DOUGLAS DC 7C



DOUGLAS DOLPHIN



DOUGLAS DC-3



DOUGLAS SKYMASTER -DC-4



BOEING 80-A



DOUGLAS DC7 B

Paid Their Way

First of the Jets



BOEING 40-B4



CONVAIR-880



BOEING 247



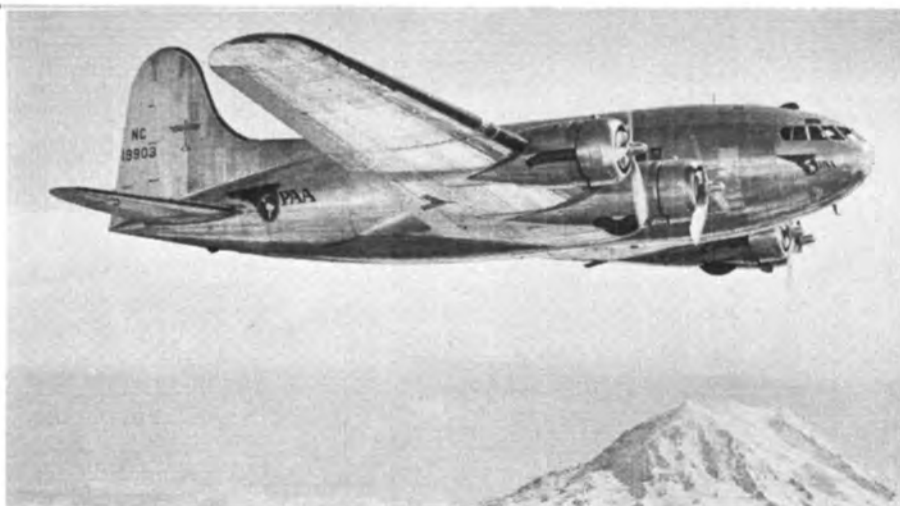
DOUGLAS DC-8



BOEING B-377



BOEING 707-320



BOEING B-307



BOEING 707-320 B

Elmo Neale Pickerill

Gentleman—Wireless man—Aviator

(Continued from Page 1)



PICKERILL EXPLAINS LEVIATHAN'S ANTENNA SYSTEM TO NOTED INVENTOR.

This picture was taken on Sept. 8 1923 aboard the S.S. Leviathan as it was outbound from New York on its way to Europe. Photo shows E.N. Pickerill pointing out the antenna system used aboard the great ship to the noted Radio Inventor Dr. Lee DeForest.

"Pick" was the legendary Chief of the "Levi" and well known to all of the wireless fraternity on the Atlantic.. Dr. DeForest who later in September 1940 was named as one of the Nine Greatest American Inventors of All Time, was on his way to Europe to return some of his inventions to the United States. This picture was taken nearly 3 years before Dr. DeForest invented the Grid Audion or three electrode vacuum tube in his small laboratory atop the Parker Building in New York City. The building was destroyed by fire in 1908 but a plaque marks the site.

While some experimentation went on with air/ground communication for the next decade, it was not until the establishment of the AIR MAIL SERVICE that wireless (now called radio) came into its own in aviation.

Elmo Neale Pickerill was born in 1885 and died 1968. At the beginning of the Century "Pick" was working the hot wires of Associated Press, United Press and Hearst Newspapers. He was one of the outstanding men in communications when he met Dr. De Forest at the St. Louis World's Fair in 1904. Later he became identified as the Chief Radio Officer of the world's largest and most famous ship, the S.S. LEVIATHAN.

The writer, feels singularly honored in receiving a letter from Pick shortly before his death on stationery of the "Early Birds" (those who flew BEFORE Dec. 17, 1916) expressing his appreciation to the Society for its fine accomplishments. He was also a brother member of the OX-5 Club.

It might be noted that when the first group of Society of Wireless Pioneers met on April 7 1973 at Trenton N.J. a vote was taken for the name of the new chapter. The name "Elmo Pickerill Chapter" was suggested by Ed Raser who had become the North East Area Director for the Society. The name was approved by Charlie Maass who founded the chapter. All present voted acclamation, as Elmo had been ship-mates on the Leviathan with many of those present and they respected his accomplishments, especially that of having been First to send code from an airplane to ground stations. It might be noted also that Elmo was given the honor of being issued License No. 1 by the Bureau of Navigation back in 1914.

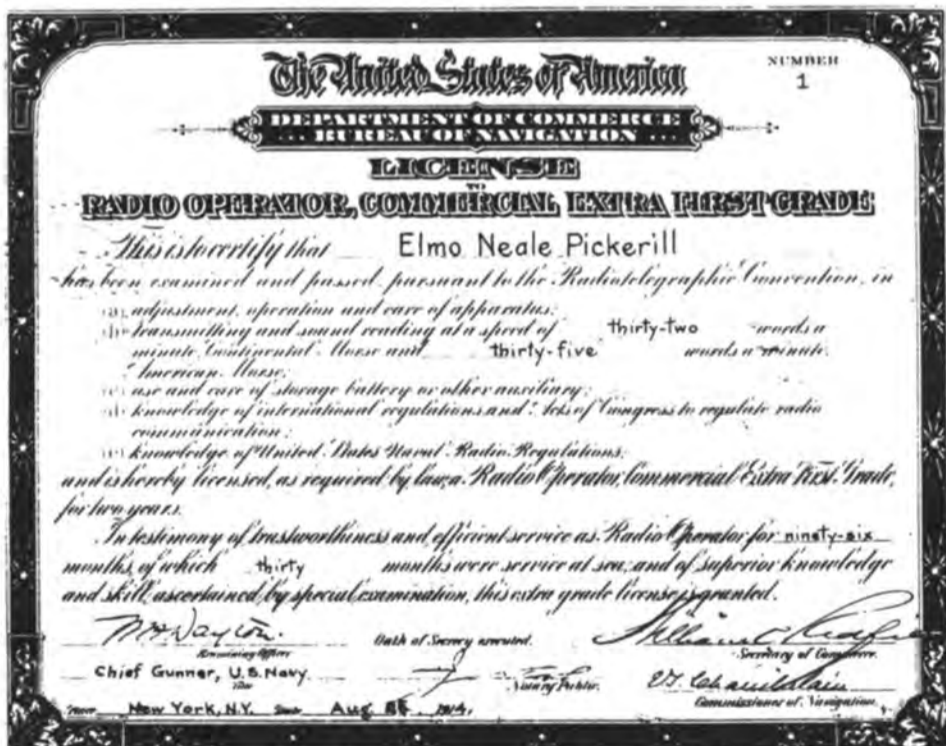
A number of fine men have piloted the Chapter since its founding in 1973. They include Charlie Maass, Don B. Masten Jr. (acting), Hermann A. Fisher, Milt Schwartz, Earl Korf (with special mention for his fine work) and to Thomas G. Kilpatrick.

We take pleasure in presenting the story of Elmo Pickerill as our feature article and you will find it starting on Page One. -30-



ELMO PICKERILL AND WILL ROGERS

This picture taken Sept 27th 1926 on a Westbound crossing of the Atlantic. Rogers was completing a tour of Europe and had 'played' the Palladium in London. He was very interested in the Wireless Station aboard the Liviathan and Chief Pickerill was giving this noted personallity the "64 \$\$ Tour". "A wonderful person"- his comment.



This is the FIRST License issued to a qualified operator in the Commercial Extra First Grade classification. License # 1 was issued on Aug. 26 1914 to Elmo Neal Pickerill. A speed of 32 WPM is recorded in Continental Morse and 35 WPM in American Morse. Licenses issued prior to this series were known as "Certificates of Skill". The No. 1 Licensee of the "COS" was James M. Baskerville who received his on May 25 1911. Mr. Pickerill received his 'COS' on August 17 1911 at the Brooklyn Navy Yard. It was No. 19.. David Sarnoff was issued No. 13. It is likely that Mr. Pickerill would have received No. 1 had he been able to reach the Brooklyn Navy Yard before Baskerville but unfortunately he was 'at sea' and could not make the No. 1 "Ticket".

THEY PIONEERED



COMMUNICATIONS ON THE FEDERAL AIRWAYS OF THE U.S.A.



Chief CAA. Communications Division - George L. Rand & Part of Staff

(INCLUDES REGIONAL LINE OFFICERS & SPECIALISTS)

FRONT ROW [L-R]: C.W. "Bill" Larsen, Tom Dodson "Bill" Cruse Gordon Pearson, Dan Givens, W.A. "Bill" Breniman [Deputy Division Chief]

MIDDLE ROW: Art Johnson, Clulver Gorsuch, P.E. White, Alick Currie, George L. Rand [Chief of Communications Division] Harold Burhop, Unidentified, Wm A. Bill LaRue.

REAR ROW: Ed Shivers, Art Blomgren, Carl Burley Claude Smith, G. A. "Jerry" Whittaker, Wm T. Fuller, Tad Matucha, "Stormy" Roose, Unidentified Franklin T. Unruh, T.K. "Ted" Johnson G. Arey, Homer Cole.



PIONEERS OF ALASKA



DIRECTOR CAA. REGION 8 - "AL" HULEN & STAFF.



[L - R] Gerald A. "Jerry" Whittaker - Communications; Dick Stryker, P&S Engineer; Ken Kelner P&S; Allen D. Hulen - Regional Administrator, "Buck" Culver - Chjef Plant & Structurs, Robert "Bob" Williams - Executive Officer.

JANUARY 1 1940 - The CAA established Region 8 covering all of Alaska. Marshall Hoppin was appointed Regional Administrator. Assistants were: Walt Plett, Ass't. RA; Al Hulen, Chf. Communications; Jack Beardslee, Airway Engr., G.A. Whittaker, Chief Fairbanks and Bill Hickock Chf. Anchorage. Later, Al Hulen relieved Hoppin as R.A. (Al Hulen was the First Communications man to become Radional Administrator in the CAA). Staffing of stations were as follows:

- 1940**
 Gravino Island, Hollingsworth; ● CORDOVA - FAIRBANKS - Whittaker ● JUNEAU - Vic Post; ● NOME Grant McMurry; ● RUBY - Geo Beckett ● SUMMIT - J. Flynn ● TALKETNA - Ed Musgrave ● YAKATAT - Thos. Cianfrani
1941 - ANIAK ● KENAI - Lawton ● KODIAK - Carl Bassler ● McGRATH ● MOSES POINT - Norris Kumler ● SITKA - Ray Operlund -
1942 - BETHEL - Wootan ● FAREWELL - McKay ● GAL-EMA - Ralph Jennings ● GULKANA - Johnson ● GUS-TAVUS - Dufrane ● HOMER - Gulley ● ILLIAMNA - Uzzell ● KOTZEBUE ● MINCHUMINA - Dick Collins ● NORTHWAY - Carl Shute ● YAKATAGA - Joe Tippetts ● BIG DELTA - Inman -
1943: NENANA - Robt. Leise ● TANANA - John Andrews ● UNALACLETE - Ed Klopp
1944 & LATER: BETTLES - Robbins ● SWENTNA - Geo. Wilkins ● [OTHER - PRECISE DATE UNKNOWN] KING SALMON (48) Plagge ● MIDDLETON ISLAND (MRL) ● PETERSBURG - Vernon Counter ● POINT BARROW - Roy Roose ● FORT YUKON (WB 278kc) John Flynn

The OFAC (Overseas Station) was commissioned at Anchorage Dec. 1 1942 - E.F. "Bill" Hickok, Chief. The OFACS at Everette Wash. was commissioned at the same time to provide communications stateside. During 1942 FLIGHT ASSISTANCE SERVICE was officialy inaugurated by CAA at all Stations.

64 YEARS OF SERVING



AVIATION SAFELY



Early History of Civil Aviation in the U.S.

A HISTORICAL REVIEW



THE EARLY COMMUNICATION SYSTEM OF THE FEDERAL AIRWAYS

EARLY AIRWAY RADIO STATIONS

Like the Pony Express, the Air Mail Service occupies a special place in the annals of American history. Each represented a great experiment in moving the mails and was characterized by the individual efforts of a small group of dedicated and fearless men.

Of the two, however, the Air Mail Service made the more significant and lasting contribution to the American scene. Where the Pony Express withered and died before the advancing telegraph line, the Air Mail Service continued to grow year by year, pushing forward the frontiers of aviation and laying the foundation for the present air transportation system.

One direct result of this service was the establishment of a string of Air Mail Radio Stations at key locations to provide weather data and other assistance to those hardy individuals who flew the trans-continental mail. Authorized originally by the Post Office Department, these facilities have evolved under the Federal Aviation Administration of the Department of Transportation and its predecessors into a nationwide network of Flight Service Stations providing a wide variety of pre-flight and in-flight services to all segments of aviation. [Note #1]

Today, the Flight Service Station network covers all of the fifty states and reaches out to Pago Pago, Wake Island and Guam in the Pacific, to Panama and to the Caribbean. There are 340 stations, including nine international stations, staffed by about 4,600 flight service station specialists. All stations are closely linked to FAA's nationwide air traffic control system by radio and teletype and many are equipped with direction finding equipment that enables them to steer lost aircraft home by means of signals from the aircraft's radio. [Note # 2] The stations also serve as the nucleus for an air - to - ground communications and electronic navigation system that extends for several hundred miles in all directions.

MAY 15 1918 - AIR MAIL BEGINS

The Post Office Department had been working on the idea of trans-continental Air Mail Service since May 15, 1918 when a 218-mile trial route was opened between Washington, Philadelphia, and New York. There was one round trip flight every day except Sunday with the War Department supplying the planes, pilots, maintenance crews and facilities for the route. Despite the sketchy communication system and the primitive state of aircraft development, the Washington - Philadelphia - New York line built up a reputation for dependability, although much of the flying was done in weather that would be considered below safe minimums by modern standards.

On July 1, 1918, the Post Office established a combination rail/air mail route between New York and Chicago. Mail destined for the Middle West and the West Coast was loaded aboard an early morning flight out of New York. The aircraft would arrive at Cleveland at night fall, whereupon the mail was transferred to a Chicago-bound train that had left New York the night before, thus saving about 16 hours to the Middle West. On eastbound trips mail was flown from Chicago at dawn to overtake the night mail train at Cleveland, which reached New York at 9:40 the following morning.

Encouraged by the time saving, the Post Office went into the Air Mail business in earnest on Aug. 12, 1918. The Army turned over its mail planes to the Post Office, and the pilots and mechanics became entirely a civil operation.

(Continued on Page 11)



SEATTLE, WASHN. 1928 - KZC
Chiefs: (1) Herb Hela, W.A.Simonson, R.A.Clark, Herb Wilson, Norm Bliss, Bernard Swaffield, J.W. Gunsolly (etc)



KANSAS CITY, MISSOURI 1928 - KRC
(1) Rome Montle (5) Frank C. Gaynor



IOWA CITY, IOWA - 1921 - KDIX/KIS
(1) P.E. White, Tony Gearhart, Silas F. Clark, Claude M. Smith



ROCK SPRINGS, WYO - 1921 - KDHN/KDN
L.D. Bates, L.D. Coman, E.C. Butler, Julius Petrison
Samuel F. Kelly, Tom Bostic, A.D. Hulén, Orville Hammond



SALT LAKE CITY, UTAH
 KSWH-KGO - 10-1920
 Art Johnson, Phil Coupland, Dan Cordano, J.Petrison, Ralph Baker
 Wm C. Hill, Art Fielder, Ray Tripp



COLUMBUS, OHIO
 Feb. 1931
 C.C. Weigand, C. Malcomb, W.A. LaRue, R.E. Grages



ST. LOUIS, MISSOURI
 KCQ - July 1929
 Thomas C. Gale, E.E. Nichols, Claude M. Smith, R.S. Allen, Edw. Plagge, F. Robison, M.E. Walton
 M.F. O'Brien, E. E. Frain

AUG 20 1920 -TRANSCONTINENTAL ROUTE AUTHORIZED

Two years later, the Post Office moved to create a transcontinental air route. On August 20, 1920, it authorized the establishment of Air Mail Radio Stations at key locations on a proposed New York to San Francisco day/night mail route. By November 1, 10 of the 17 stations to be established were in operation and mail was being carried from coast to coast by air.

But the trip was long and difficult and included frequent stops at such places as New Brunswick, N. J.; Bellefonte, PA.; Cleveland and Bryan, Ohio; Chicago; Iowa City, and North Platte, Neb.; Cheyenne and Rock Springs, Wyo.; Salt Lake City; and Elko and Reno, Nev. Three of the radio stations serving these locations---Rock Springs, Elko and Salt Lake City---have remained in continuous operation ever since along with the station at Washington, D. C. which established at about the same time.

LONELY VIGIL

These early stations generally were staffed by a lone operator who worked seven days a week and stood split shifts to accommodate the dawn departure in dusk arrival schedule of the mail planes. The typical operator rose at 4:30 a.m. and began preparations for the morning flight by radioing checkpoints along the route for weather reports. At the same time he would report his local conditions to other callers up and down the line.

CW- CHOSEN FOR DEPENDABILITY

Radio telegraphy was used exclusively, being cheaper than leased wire telegraphy and more dependable than voice radio. Except for experimental work, no radio communications in the early Twenties were air to ground. Acceptable transmission speed for the "CW" Morse code was 30 words per minute, but 40 to 45 words was not uncommon and some operators were limited only by the ability of the receiver to copy letters gushing from the instrument.

When the radio was not transmitting aeronautical information the lines were open for other government business. Department of Agriculture reports showed market conditions in Cincinnati, Chicago, Kansas City and Omaha. Party-Line gossip and neighborly messages also found their way into the system, linking all participants into a kind of family relationship.

The station operator made his own weather observations and forecasts, including estimated cloud ceiling, temperature, visibility, wind-speed and direction, and field conditions. Additional nearby weather observations were phoned in to him by part-time weather observers, and pilots would pass on their inflight weather observations after landing. But at best, the weather "map" produced consisted of a narrow swath from one station to the next, with little information on adjacent storm systems.

(Continued on Page 12)



PASCO, WASHINGTON
 KCS
 Bennett, Warren Boeshore, Bill Breniman, Harold Johnson



LA CROSSE, WISC.
 July - 1929
 Harold C. Burhop, Samuel Allen, L.L. Arnold, A. J. Silva



ORIGINAL BROADCAST STATION
 Call - HEE/HAW
 Tom Chapman recorded this bit of nostalgia at the Prewit, New Mexico Airways Beacon, Circa 1929

THE DAY'S WORK

By 8:30 in the morning the station operator would usually have completed all his calls and seen his pilot off the ground, shooing stray cattle off of the airstrip, if necessary, helping sort and stow the mail and looking after supplies. He was then free until about 4:30 in the afternoon, when he stood a second four hour shift, servicing the arriving daylight flight, and the departing night flight.

If a landing in darkness or poor visibility was anticipated he prepared to light the airfield with the best means at hand -- automobile headlights, oil durms, flares, etc. Snow drifts often had to be cleared from the runway and runway edges frequently needed delineation in the form of lighted markers.

If field conditions were too poor for a safe landing, the station operator had to warn the pilot, using pre-arranged signals. Many long and lonely nights were spent waiting anxiously for the husky roar of a Liberty engine ... that sometimes never came.

The typical starting salary for these early station attendants was \$1,200 a year. Raises were modest and infrequent and overtime was unpaid. By comparison, the pilots earned a base pay of \$2,000 a year with mileage bonuses, depending on the difficulty of the route. Bonuses were doubled at night, when the hazards increased several-fold

The typical Air Mail plane in the pioneer stage was an open cockpit DeHavilland biplane, with an unreliable compass and little else in the way of instruments. Pilots flew by the "seat of their pants", and counted heavily on the airfield attendant to keep them out of trouble.

JULY 1 1927- USLHS TAKES OVER NEW AGENCY

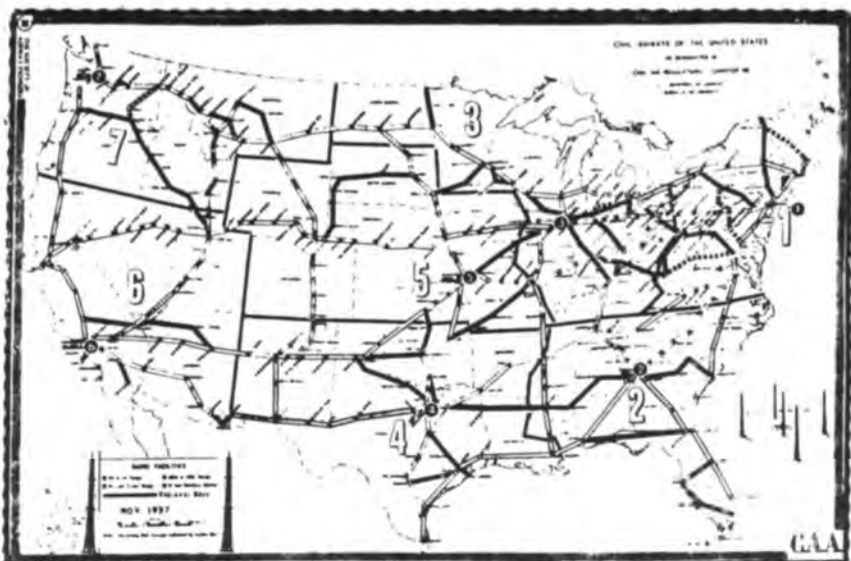
On July 1, 1927, after seven years of regular Air Mail Service, the Post Office turned over the ground-support facilities to the Department of Commerce. At the time of transfer, more than two-thirds of the 2,665-mile Transcontinental Airway was lighted with 101 electric beacons and 417 acetylene gas beacons. Ground personnel in the system consisted of 45 radio operators, 14 maintenance mechanics and 84 caretakers. The entire operation was administered by the Lighthouse Service of the Department of Commerce.

In addition to the 17 original Air Mail (renamed Airway) Radio Stations, there were a number of intermediate Airway Keeper Stations with low power radio marker beacons. Many of these were located in desolate wilderness country or on high mountain passes accessible only by mule train. Bitter Creek and Cherokee in Wyoming; Locomotive Springs in Utah; Beowawe and Buffalo Valley in Nevada; Guadalupe Pass, Texas and Donner Summit in California were typical station sites.

At Donner Summit (alt. 7,100 feet), the tower and radio shack had to be anchored to solid rock in order to keep them from being blown away by the fierce winds of the high Sierras. Often the station keepers were snowbound for months.

Maintaining a remote station called for a high degree of ingenuity, a tolerance for isolation - and at times the agility of a mountain goat. Skis, sleds and snow-shoes were standard operating equipment during the long winter seasons. Shelters were prefabricated wooden huts, drab and drafty and furnished strictly for utility, housing one to four men. Total annual outlay at these locations was about \$12,000, which included salaries and supplies. A good hunts-man was always a welcome addition to the complement.

(Continued on Page 13)



WESTERN CAA-ARS.



NORTH PLATTE, Nebraska - 1921
KDHM/KVM - Elsworth Hossmer
Bruner, Wright, Cutting, Pritchard



HUMBOLDT, NEVADA
Keeper and Weather Station
Intermediate Landing Field.



BURLEY, IDAHO - 1927
KCEI - G.W.Hurst, Busby, Thurman,
Ross, Wall, Peirce, Nee, Storm



RENO, NEVADA - 1920
KDEK - KLK. Lucian D. Coman,
Lindsay, Cordano, Beedle, Jennings,
Breniman, Fielder, Hulén.



PASCO, WASHINGTON - 1927
KCS - Bennett, Boeshore, Breniman
Johnson (Moved to Pendleton, Oregon)

AMRS-ARS-ACS-INSAC-SBMRAZ-FSS→Etc.★

(Continued from Page 12)

Lighting the airway and extending the radio capability had a favorable effect on flight safety from the very beginning. The 1919 fatality ratio of one pilot killed for every 114,324 miles of Air Mail flight was reduced to one fatality per 2.5 million miles by 1926.

In 1938 the Airway Radio Station was re-designated "Airway Communication Station", under the newly created Civil Aeronautic Authority (later the Civil Aeronautics Administration of the Department of Commerce). By this time, thanks to air-to-ground radio capability, station operators could actively participate in the control of a flight in progress, giving the latest weather reports and helping lost pilots identify local landmarks and find their bearing.

The term "flight service station" [note #3] came into use with the creation of the Federal Aviation Agency in 1958, and has continued to the present day, when FAA is the Federal Aviation Administration of the Department of Transportation.

Today's flight service station specialist no longer is required to lead the rugged pioneer life of his predecessors in the Air Mail and Airway Radio Stations nor risk his life propping balky engines on frozen fields, or riding in the mail compartment of open biplanes. But his dedication to the safety of pilots who seek his assistance is as strong as it was half a century ago, when the age of flight tottered forward in the form of the United States Air Mail Service. And he is still the person most pilots rely on for flight planning data, for guidance over unfamiliar terrain, for steady reassurance when they get into trouble. No one who has ever been caught in a light plane in a violent thunderstorm, or become disoriented in fog over hazardous terrain, or run low of fuel in pitch darkness, can forget what it is to hear a clam, steady voice on the radio receiver leading him out of agonizing uncertainty and down to the firm green earth.

Airplane "accidents that didn't happen" seldom make headlines or heroes, but the men and women of FAA's flight service stations can live without either. Then their satisfaction comes from knowing they have helped someone get home safely, whether he be a friend, a neighbor, or a stranger passing overhead in the night.

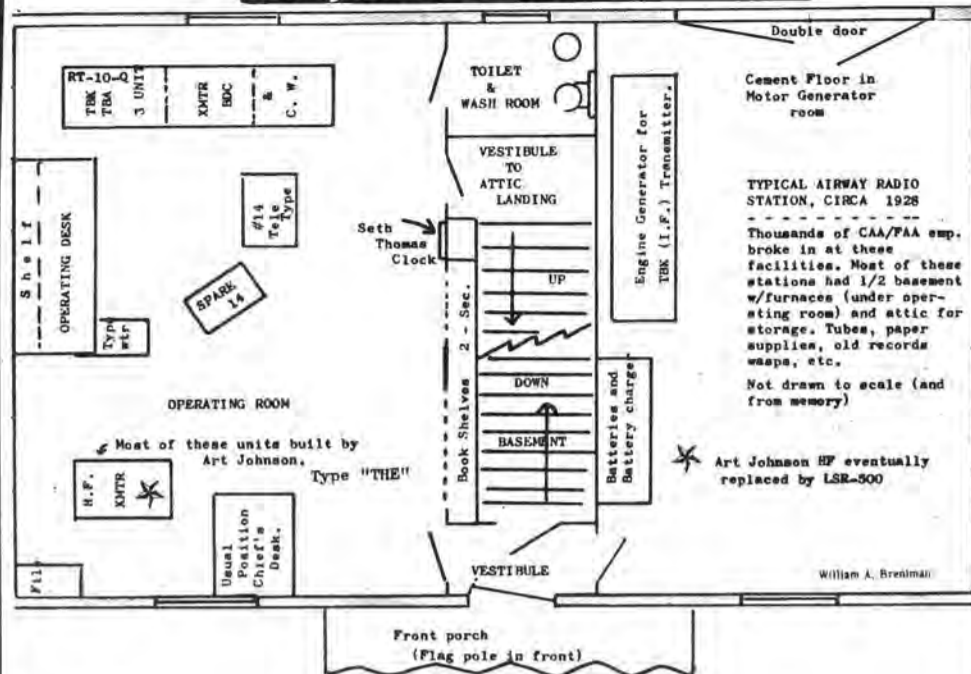
Editorial Comment

The foregoing story was written on the 50th Anniversary of the start of the Airways Radio Stations under the Air Commerce Act which President Coolidge signed into law in 1926. The "fact" sheet carrying the story has been reprinted as furnished by the FAA some 7 year ago.. It is the History of the first 50 years under the CAA/FAA. The first station built for Air Mail Service was commissioned on Sept. 15 1919. By the time the CAA took over the service from the U. S. Post Office in 1926 some 17 stations had been established and much history written. The following notes are by William A. Breniman, Editor of Sparks Journal., with comments on several phases of Airways operations which were of special interest to him.

Note # 1.
Historically, there has probably never been as large an organization of radio operators so dedicated and devoted to their calling as those men and women who have or are now working in the FAA (as we know it today). These men and women have been the "Guardian Angels" of those flying in their air-space areas. Emergencies of many kinds do occur and at quite frequent intervals. Knowing that the lives of pilots and those flying in their coverage area frequently depend upon their alertness and skill in providing knowledgeable assistance should such occur, they have developed a near religious zeal in providing "Flight Assistance Service" and information to all those in need. The Editor of Sparks Journal enjoys great pride and satisfaction in having been a part of the "CAA" Team in the golden years. He spent much time as prime advocate in working up programs which have been adopted and in use today and is proud of the names of the FAA stations now called "Flight Service Stations (FSS)". We are proud of our heritage. The ability of the early pioneers to accomplish great projects without the aid of blue-prints in a new field which sometimes taxed their knowledge and often their health to the limit. They were the 'avant garde' of a new industry and a new way of life. We should think about them and salute their memory for the results they achieved - a living tribute to mankind. - 30 -



Airway Radio Station Layout : 1928



Note # 2.
There are probably few 'old timers' who remembered that the CAA had ever equipped any of their stations with direction finding (DF) equipment. After WW2, three Kolster DF units were furnished to the CAA for experimental use. One was installed at the ARS Station in Pittsburgh; the second at Station KCT (Los Angeles - located in near-by Glendale) and the third was scheduled for New York but never installed. This unit was cannibalized to keep the Pittsburgh operative. Ye Ed was a fledgling pilot having soloed in 1924 at Burdette Field in LAX under the tutelage of Jack Frye. Jack went on to become Proxy of TWA. Also during his marine years he installed several Kolster units aboard ships and quite familiar with their operation. My interest in the use of "DF" equipment in aviation was very keen.

During my assignment at KCT in 1929, I had the opportunity of checking aircraft with this old DF unit on many occasions. I found we had many terrain problems, hence we reluctantly had to dismantle it. The Pittsburgh DF unit meantime continued to serve on a reliable basis and furnished many 'saves' to pilots in trouble. It was used until the Service ran out of replacement parts.

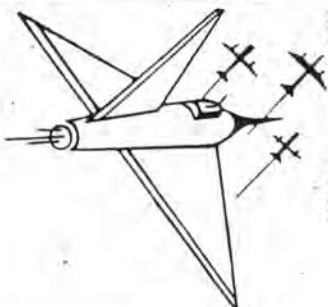
During my tenure with CAA, I could never get the potential of "DF" use in aviation out of my mind. As the years passed and I received assignments of authority, I initiated a program to furnish UHF/VHF-DF equipment for most stations. Unfortunately, most of my early budget requests were blue-pencilled but in 1950 I was able to obtain 3 units.

One of these I located at Red Bluff, Calif. The second at Goshen, Ind. and the third at Front Royal, VA. where Ray Bowers, a member of SOWP was Chief. We were unable to retain the facility at Front Royal however, due to terrain problems and it was therefore transferred to Nantucket Island where it has been in constant use. Both the Red Bluff and Goshen installations recorded many 'Saves' so it was not too long until the CAA gave serious attention to the program I had initiated. Today the equipment and its use is part of the "Flight Assistance Service" which is largely taken for granted by the public. It took a long time to break the barrier but I feel my efforts were not in vain and the saving of lives and property are a constant reminder of my championship of this program which I felt mandated to carry out.

Note #3
The Federal Aviation Agency officially superceded the CAA under the Federal Aviation Act which became fully operational effective on Dec. 31 1958, a few months after Ye Ed had retired from the Service. I had proposed that stations be called "Flight Assistance Stations". The name selected by FAA was "Flight Service Station". I could not quarrel with the substitution of "Service" for "Assistance" hence I compliment my former staff member Aubrey E. "Bud" Cole for the selection. - 30 -

SOWP RADAR SCOPE CHECKS THE WORLD





MAY DAY! MAY DAY! MAY DAY

The Flight Assist



The radio call on the emergency frequency was compelling.



"Mayday! Mayday!" crackled over the receiver in the Federal Aviation Administration's Flight Service Station at Tallahassee, FL.



The call came from a two-seater Navy A-4 Skyhawk which had just hit a large bird on a low-level, high-speed training mission. The canopy had been ripped off, smashing vital flight instruments in the process, and the wind was tearing through the cockpit, buffeting the crew and carrying the navigation charts and other loose objects overboard.



The instructor pilot, who was seriously injured in the strike, ejected from the aircraft, expecting his student to follow. But the student's ejection mechanism had jammed, and now he was alone in the aircraft and asking for help.



Galvanized into action by the "Mayday" call, the team of Flight Service Station specialists at Tallahassee first established communications with the pilot and then pinpointed his location with electronic direction-finding equipment. In the interim, local civil authorities were alerted to search for the injured instructor pilot who had ejected from the aircraft.



Contact also was made with other FAA air traffic facilities to clear the air for the crippled jet. The pilot then was given the necessary vectors (headings) to the nearest airport capable of accommodating his aircraft. Following these calm and precise instructions, he made a safe and uneventful landing. Not long afterwards his injured instructor was found and rushed to a hospital.



Such appeals for aid are not uncommon at the 340 Flight Service operated in the United States and its territories by the Federal Aviation Administration of the Department of Transportation. They happen more than five times a day on the average. Last year alone, these facilities provided emergency assistance to more than 1,900 aircraft in distress.



The great majority of flight assists -- over 1,400 last year -- involve pilots who are lost or "temporarily unsure of their position." But frequently the pilot not only is lost but also has other problems. He may be low on fuel, or have mechanical problems, or be caught in adverse weather conditions. And someday everything goes wrong at once.

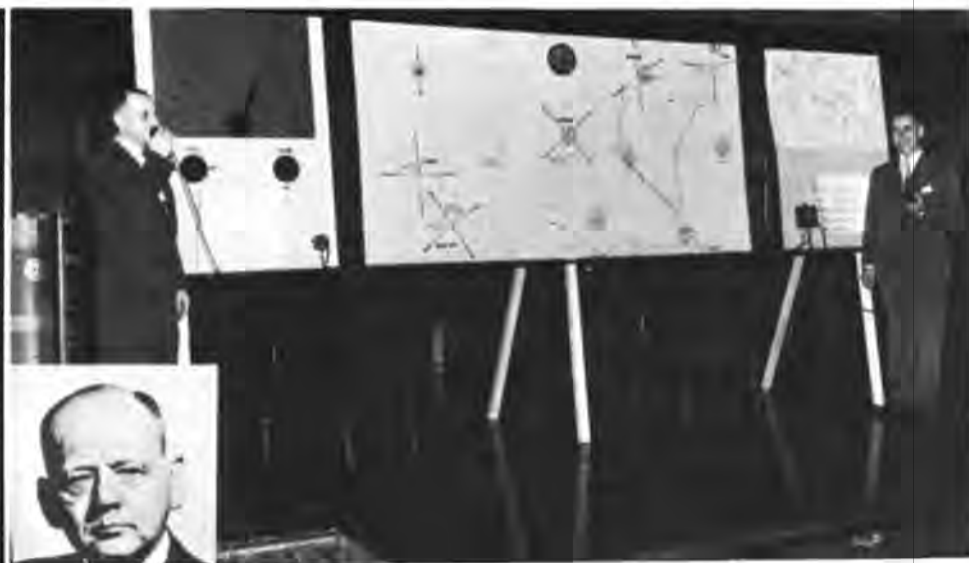


In the case of lost aircraft, the use of direction finding equipment which uses radio signals from the lost aircraft to pinpoint its location, has proved an invaluable aid. But sometimes the Flight Service Station specialist's knowledge of local terrain can be equally effective. By having the pilot describe local landmarks, the specialist frequently is able to tell him his location immediately and give him the necessary directions to the nearest airport.



For most Flight Service Station specialists, the most gratifying flight assists -- or "save," as they're sometimes called -- are those involving pilots caught in weather conditions beyond their flying capabilities. In these situations -- and there were more than 300 reported last year -- the specialist's coolness and judgment can mean the difference between life and death.

(Continued on Page 15)



Pilot Seminars - How to use CAA Nav.-Aids

During the late 1940's, "Ye Ed" [then Chief Communications Division Region III - Chicago] initiated a program with the aid of our Regional Administrator, George Vest to hold seminars throughout the Region (IL, ID, IO, MI, WI, MN, ND, SD.) to inform pilots how to use the "Flight Assistance Service" the CAA stations had to offer. One of the subjects was the use of the relatively new "VOR RANGE" system. We were aided in this program by Karl E. Voelter who helped us program or schedule our meetings which were held in most of the large airports within regional boundaries.

Pictured above is a meeting and demonstration we put on in the Auditorium of the Department of Commerce, Washington D.C. in May of 1950 for the benefit of DOC and CAA officials and staff. "Ye Ed" had become Deputy Chief of Communications by that time and felt it was a good idea to indoctrinate Washington employees of CAA and DOC in the 'nuts and bolts' of Flight Assistance Service' to give them a more comprehensive insight on our operations.

We were quite fortunate to secure the services of two of our field personnel who were especially interested in the program and volunteered their time and service to promote it. Shown on stage at right is Fred D. Sommer, Chief of the CAA Station in Peoria, Illinois where he had served for many years. At left with microphone is Fred Smith, one of our Peoria station operators who had quite a few years of piloting to his credit. This part of the program included in its scenario, a pilot who became lost and was calling a CAA ground station for aid. He was directed on the use of the Omni-range and how to vector himself into an airport. The program in Washington, attended by the Administrator D. W. Rentzel and many of his staff was given an outstanding acclaim by all who attended.

Karl Volter, well known and respected in the Airway and pilot circles everywhere took off on his last long flight Nov. 1 1982. Karl had been a seasoned racing, test and experimental pilot starting in 1928 when he went to Miami as representative of Curtiss-Wright to assist in the operation of the first All American Air Races. He served in WW2 as a Marine Corps Officer. He saw service at Pearl Harbor, Engebi, (Marshall Islands), and at Le Shima where he was Air Base Commander. Le Shima was the closest US fighter base to Japan. After the War Karl reported to George Vest at Chicago to head up a new General Aviation Development Division. This is during the time he helped Ye Ed and his program. Later Karl went to Washington as Advisor to three consecutive FAA Administrators on General Aviation matters. After retirement he was to become Secretary-Treasurer of the "OX-5" Club [Serial 84]. I have enjoyed a long kinship with Karl as "Ye Ed" has also been a long standing member of the OX-5 Club of America with serial - 5551.

Fred D. Sommer after retiring from CAA became a Special Investigator of the Consumer Fraud Division, working for the Attorney General of Illinois. Retiring from that position a few years back. Fred now lives in Colorado Springs, Colorado - he says it is the dream-spot for all shell-backs and airmen.

Another pioneer of the CAA who does not show in this program is George L. Rand who is pictured on the opposite page. George became Chief of the Communications Division for CAA, succeeding Eugene Sibley when he retired in 1950. George Rand, with many years of flying to his credit became one of the best Administrators in the Service. He was keenly interested in the "Flight Assistance Program" and the way it could aid General Aviation. George retired many years ago and now lives in Fort Worth, Texas... Suh!



A Happy Landing—thanks to a dedicated CAA

Such was the case earlier this year when a young engaged couple took off in a single-engine light plane from Florence, S.C., for their wedding in Fort Wayne, Ind. Not long after passing the mid point of their flight, the pilot contacted the Huntington, W. VA, Flight Service Station to report he was caught in a rapidly deteriorating weather situation and asked for help.

Using direction finding equipment and working in conjunction with FAA's Cleveland Air Route Traffic Control Center, the Huntington FSS established the aircraft's position near Portsmouth, Ohio. By this time, however, the pilot was reporting that he was completely surrounded by clouds and was being buffeted by severe turbulence.

The Huntington FSS decided it had no alternative other than to bring the non-instrument rated pilot down through the clouds using DF (direction finding equipment) guidance for a landing at the Huntington Airport. Weather condition, meanwhile, continued to worsen. The pilot reported he was in the middle of a violent thunderstorm and couldn't take his hands off the wheel even momentarily for fear of losing control. In addition, freezing rain and hail were blasting into the cockpit through a small air vent and ice was building up on the control surfaces.

But the calm voice of the Huntington FSS was reassuring. Gradually it guided the aircraft through the storm. Fifteen minutes after starting its descent, the aircraft broke through the cloud cover just seven miles northeast of the airport, where it made an erratic landing shortly thereafter, blowing a tire in the process.

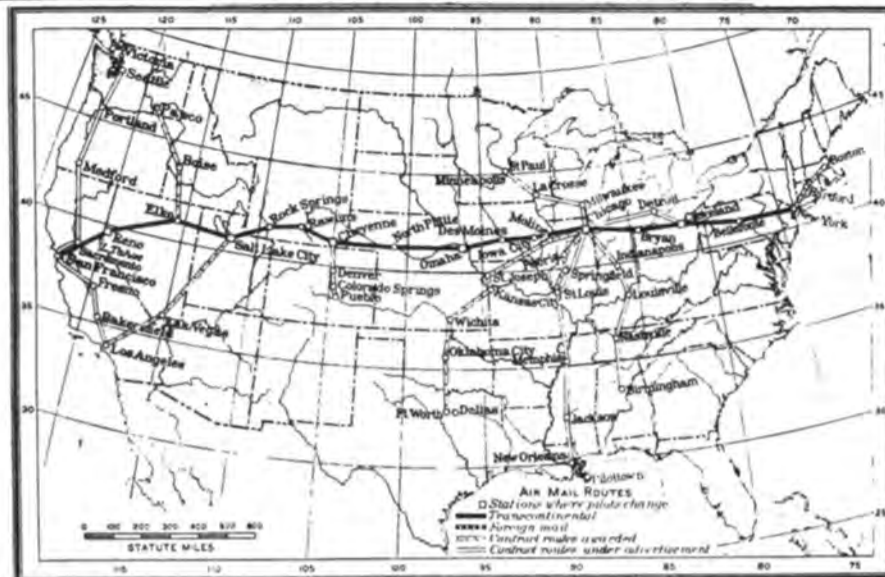
Eleven days after this incident the Huntington FSS received a post card from the couple who were honeymooning in Niagra Falls. It stated simply:

"Because of you, we are able to be enjoying our honeymoon here.

Thanks again for everything."

Ask any of the 4,000 men and women who staff the FAA Flight Service Station network and they'll tell you that on days like this they wouldn't trade jobs with anyone.

YESTERDAY



Drawn by A. H. Dumstead

A MAP OF THE UNITED STATES AIR MAIL ROUTES IN OPERATION AND PROPOSED

The transcontinental Government-operated Air Mail route between New York and San Francisco forms the backbone of "a skeleton in the making" of commercial Air Mail routes. Five commercial contract Air Mail routes have already been awarded to contractors, other routes are under advertisement, and additional routes are under consideration by the Post Office Department. During the fiscal year 1925 the Air Mail expended \$1.097 for every mile flown, and flew 2,501,555 miles. The cost for transportation only (that is, pilots' salaries and gas and oil) was 20.9 cents per mile. The rest was the cost of building, maintaining and overhauling the planes, engines, and other equipment; the operation of the 18 terminal fields, 89 emergency fields, and approximately 500 beacon lights along the 2,665-mile airway, radio operators' salaries, watchmen, etc.

Eugene Sibley—Honored



A TRIBUTE TO EUGENE SIBLEY

I would like to reprint an article prepared by Charlie Planch that I ran in the "CA NEWS" April 4, 1951, when I was editor of that paper for the Washington, D.C. Civil Aeronautics Club of the CAA and CAB. The story about Gene is on the eve of his retirement after 32 years of Government Service, mostly spent in building the Airways System from scratch to the giant complex operation it became at the time Gene left the CAA.

Through the vagaries of fortune, I was Deputy Chief to Gene Sibley for a short period of time although Gene was taking leave pending retirement at the time. Mr. Sibley was a wonderful man and did more perhaps than any single person to build the Airways System that we know today.

His back porch at home is paved with rocks which he has gathered from all over the country. His hobbies, which he expects to take up most of his time from now on, are gardening and the cultivation of special dwarf evergreen trees.

He was one of the technical experts of the CAA at the Provisional International Civil Aviation Organization when it was organized in Chicago in 1943, and he has been active in ICAO matters from time to time.

W.A.B.

GENE SIBLEY IS RETIRING

Back in 1919, when the Post Office Department was experimenting with speeding up the mail by flying it, a young man named Eugene Sibley joined the government as an administrative worker.

This month, Gene Sibley, who has stamped his name indelibly upon the airways system of this country, written it firmly on many pages of international aviation history, and built his own modicum of immortality in the hearts of thousands of friends in the CAA and the aviation industry, will drop the "8:30 to 5" routine and take it easy. To help him enjoy his easy chair at home, his friends will present him with a color slide projector on April 5 at a ceremony in the International Region where Sibley has been assigned recently. On that day Gene will be 60 but he will work to the end of the month before retiring.

Gene is one of the few remaining members of the "Lighthouse Gang" which featured the early history of the CAA and its predecessors. Before there was a Federal aviation organization, construction of the airways was centered in the Bureau of Lighthouses. Sibley came to that organization in 1928, when the CAA was a lot of words in fresh ink on a white page. Most of his work with the agency has been in airways operations, and within that area he specialized in communications. He knows the airways of this country mile by mile and, through his long experience, counts his friends and personal acquaintances within the CAA in the thousands.

Sibley is a man of enthusiasms. He collects strange rocks. One day he drove 50 miles or so to a remote communications station in the southwest to inspect it, and found it surrounded by very interesting rock formations. After filling his pockets with rare specimens, he headed back to town, where he finally remembered that it was a CAA communications station he really went out to look at.

Administrators of FAA, CAA, and Their Predecessor Agencies

Agency, Title, and Incumbent	Tenure	
	From	To
AERONAUTICS BRANCH, DEPARTMENT OF COMMERCE		
Assistant Secretary of Commerce for Aeronautics:		
William P. MacCracken, Jr.	8/11/26	10/1/29
Clarence M. Young	10/1/29	3/4/33
Director of Aeronautics:		
Eugene L. Vidal	10/1/28	6/30/34
BUREAU OF AIR COMMERCE, DEPARTMENT OF COMMERCE		
Director of Air Commerce:		
Eugene L. Vidal	7/1/24	3/1/37
Fred D. Fagg, Jr.	3/1/37	4/15/38
Denis Mulligan	4/16/38	8/8/38
CIVIL AERONAUTICS AUTHORITY		
Chairman:		
Edward J. Noble	8/22/28	4/12/39
Robert H. Hinckley	4/12/39	7/8/40
Administrator:		
Clinton M. Hester	8/22/28	6/30/40
CIVIL AERONAUTICS ADMINISTRATION		
Administrator:		
Donald H. Connolly	7/11/40	1/15/42
Charles I. Stanton	3/27/42	8/22/44
Theodore P. Wright	8/22/44	1/14/48
Delos W. Rentzel	4/8/48	9/18/50
Donald W. Nyrop	9/19/50	3/18/51
Charles F. Horne	3/19/51	3/6/53
Frederick B. Lee	3/11/53	12/8/55
Charles J. Lowen	12/12/55	9/5/56
James T. Pyle	12/20/56	12/30/58
FEDERAL AVIATION AGENCY		
Administrator:		
Elwood R. Quesada	11/1/58	1/20/61
Najeeb E. Halaby	3/3/61	



This is a group picture of the "Jet Indoctrination" class at Moddy Field taken in 1955. Two FAA men and the rest are all 'Cunnels' Suh. Identifying the FAA men to those who do not recognize them: Kneeling left: Chris Lample one of the real veterans of the (now) FAA. Pioneer Pilot [they named a "DC-3" after him - "King Kris" in Alaska] he has held many top administrative positions in the organization including Director of Airways, Director of Airports in Alaska. He was named to be Regional Administrator for Alaska early WW-2 but he was called to Washington instead to fill a top post in the war effort. George Rand is squatting at right (The difference between kneeling and squatting is minimal). Rand came through the ranks to position of Airway Traffic Supervisor and then was appointed Chief Communication Division in Washington. Later he managed the training and storage complex at Oklahoma City before retiring.



PHOTO Highlights

Avant-garde of the FAA.

SEES ALL

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TELLS ALL!

Ye Olde "Lighthouse" Gang



YE OLDE "LIGHTHOUSE" GANG
Early day picture of Captain F. C. Hingsburg (now deceased) and his staff who "pioneered" the Airways in the old "Lighthouse" Service.

Personal identification is shown directly under each individual. Much is owed by the Aviation Industry to these pioneers who were collectively responsible for initiating the Airways System in the U.S.A.

"Airway Pioneers" Honored



"AIRWAY PIONEERS" HONORARY
The Society of Airway Pioneers at a meeting and ceremony held on April 6, 1959, presented the four gentlemen holding Society Membership Plaques with Honorary Memberships in the organization. Presentation was made by Mr. Carl Kusrow, Director of the Capitol Wing and Mr. Chris Lample, Chairman of the Society's Awards Committee. Awards were made for the outstanding contributions these individuals have made over the years and especially in the early days of the industry.

Seated (L. to R.) Charles I. Stanton, Early Airway Pioneer and Second Administrator of the CAA; Hon. Wm. P. MacCracken, First Ass't Secretary of Commerce for Aeronautics (1926); Rear Admiral L. O. Colbert, USCGS (Ret.), Pioneer in development of Aeronautical Charts.

Standing (L. to R.) Chris M. Lample, Early Pioneer and Chairman Awards Committee; Clinton M. Hester, First Administrator under CAA Act of 1938; W. Clifton Stone, early employee of the CAA; Carl F. Kusrow, Regional Director of the Capitol Wing of the Society.



Courtesy - Thomas H. Chapman

Airways Division Conference - Feb. 8, 1928 - Washington D.C.

John Bonforte
A. J. LaBaie
Al Waite
W. T. Miller
Frank Tower
H. J. Walls
Jack Sommers
W. E. Kline
Wm. Snyder
Geo. C. Miller
E. L. Jones

Airways Extension Supt.
Electrical Engineer
Airport Specialist
Airways Extension Supt.
Supt. Airway Construction
Radio Engineer
Airways Extension Supt.
Airways Engineer
Airport Specialist
Airways Extension Supt.
Information Chief
(just behind G. C. Miller)
Airways Extension Supt.
Radio Engineer
Airways Extension Supt.
Medical Chief
Construction Chief
Inspector Aircraft

Airways Division
Airways Division
Aeronautics Branch
Airways Division
Airways Division
Airways Division
Airways Division
Salt Lake City Office
Aeronautics Branch
Airways Division
Aeronautics Branch

Airways Division
Airways Division
Aeronautics Branch
Airways Division
Aeronautics Branch

Eugene S. Sibley
W. F. MacCracken
W. S. Kenyon
Capt. Fred C. Hingsburg
Ted Haight
Herman Lucas
Charles I. Stanton
Stan Boggs
William Centner
G. E. Fitzgerald
Bert Creighton
Thomas H. Chapman

I. D. Marshall
J. P. Worthington
W. P. Avery
Al Curtis
Thomas B. Bourne

Chief Communications
Ass't. Secretary of Commerce
Airways Extension Supt.
Chief Engineer
Airways Extension Supt.
Airways Extension Supt.
Airways Extension Supt.
Airways Extension Supt.
Airport Specialist
Airways Extension Supt.
Airways Extension Supt.
Airways Extension Supt.

Airways Engineer (Chicago Office)
Extension Supt.
Airport Engineer
Airways Engineer
Airways Extension Supt.

Airways Division (Aeronautics)
Airways Division
Airways Division
Patrol Pilot
Airways Division
Airways Division
Airways Division
Aeronautics Branch
Airways Division
Airways Division
Weather Branch
Bureau L. H.
Airways Division
Aeronautics Branch (S.F. - Bureau - L.H.)
Airways Division

C.A.A. Operations --1950



Picture taken June 12th, 1950, in Washington show most of the Chiefs of the Operations Division — both field and the Washington Office and principal line and staff members who have been largely responsible for the development of the Airways System, including Communications, Traffic Control and the use of all Navigational Aids including techniques and procedures which make our airways the most efficient in the world. Members of this group (reading from left to right include the following: W. A. "Bill" Breniman (Deputy Chief Communications), C. M. Smith, C. J. Stock, F. L. Smith (deceased), C. S.

Fuller, H. F. Cole, C. C. Gorsuch, Art Johnson, A. W. Whitaker, R. J. Petite, R. H. McRoberts, Tom Dodson, P. E. Riney, F. "Ed" Shivers, F. R. Robinson (deceased), A. C. Leathers, H. J. Burhop, R. O. Donaldson, R. T. Manhardt, Clif P. Burton (Chief ATC Div.), G. C. Pearson, Ed A. Westlake, Geo. L. Rand (Chief Communications Div.), R. S. Roose, C. C. Wanycott, G. A. Whittaker, P. E. White, D. R. Whitney, Vic J. Kayne (Deputy Chief ATC Div.), S. B. Smith, H. H. McFarlane, D. L. Givens, F. T. Unruh, Bernard Suverkrup (deceased), J. B. Watson, H. S. Chandler, A. C. Blomgren, J. D. Saunders, R. A. Mattmueller, W. A. LaRue, T. K. Johnson (deceased).



L/R Sitting TELETYPE CORPORATION, CHICAGO (School)
Al Brendel (Newark), Jack Bourke (El Paso) Geo. A. Hall - (Burbank) Bill Breniman (Pasco), Omar Young (Omaha)
STANDING: A. D. Hulen (Slk), W. A. Wallace (Cheyenne) Mr. Culkeen - Teletype Corpn, Chicago; Bill LaRue (Camden) P. E. Riney (Evansville), Bill Crawford (Cleveland). Mr. Malcome from Port Columbus took picture.



L/R
Elmer C. Butler (Dallas); Norman W. Bliss (Albuquerque), Chas. W. "Bill" Larsen (Portland); Ed. Carpenter (Fort Worth); Dewey W. Perrine (Glendale) Peter W. Peterson (Cleveland) Benj L. Weinberg (Atlanta); Harry Swart () Art Johnson (Oakland) SUPERVISORS ATTEND SCHOOL 1935 Butler, Bliss, Larsen, Weinberg and Johnson.

AIRWAYS COMMUNICATION OPERATIONS CONFERENCE OKLAHOMA CITY MARCH 26-29, 1947



Left to Right
FIRST ROW:
Breniman-3, Roose-2, Robinson-2, Hulen-4, McRoberts-Wa, Carrick-Wa, Miss Reeder-TC, Sibley-Wa, LaRue-1,

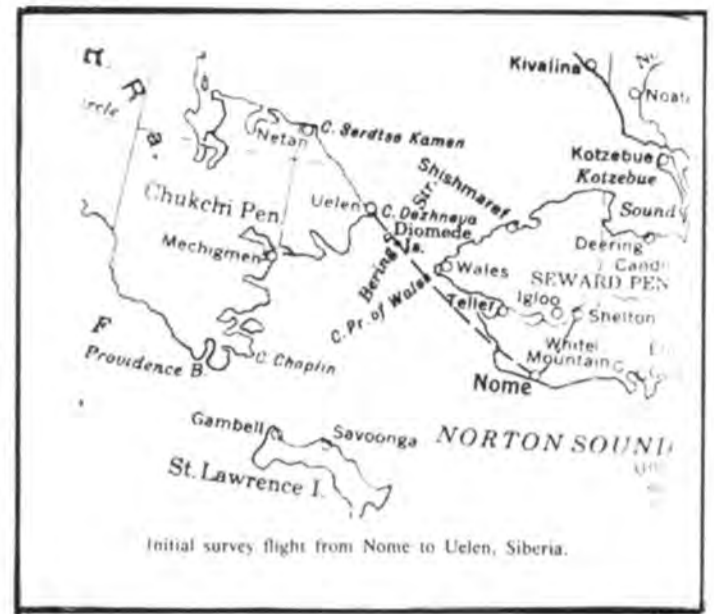
SECOND ROW:
Smith-8, Fuller-7, Whittaker-A, Huber-Wa, Larsen-7, Timmerman-3, Kline-Wa, Matucha-5, White-5, Rand-4, Givens-8, Ted Johnson-8, Art Johnson-4, Unruh-4, Donaldson-1, Merritt-Wa, Manhardt-Wa.
● Reported deceased

LEGEND: No. indicates Region; (••) Deceased; (●) Unidentified.



Pioneer Mail Flight to Siberia

By ROBERT J. GLEASON
Photographs from the Author



Initial survey flight from Nome to Uelen, Siberia.

In these days of daily trans-polar flights by giant jets carrying thousands of passengers between the Orient and North America and between the Orient and Europe, via Alaska, the pioneering air transport efforts are rapidly being forgotten. This is written to relate a small, little-known but significant attempt to initiate international service through Alaska to the Orient almost 40 years ago.

Many Alaskans recall the world-acclaimed flight of Eilson and Wilkins from Point Barrow to Spitzbergen in 1928, and the flight of the Lindberghs from New York to Point Barrow, Nome, Petropavlovsk, Tokyo and Nanking in 1931. These are covered, respectively in Sir Hubert Wilkins' book, "Flying the Arctic," and Anne Lindbergh's beautiful story, "North to the Orient."

Juan Trippe, the visionary head of Pan American Airways, had backed and assisted the Lindberghs' flight and had long been a believer in Great Circle world routes through the North. This culminated in the purchase of Alaskan Airways and Pacific International Airways by Pan American Airways in 1932 and, with their aircraft and personnel, forming Pacific Alaska Airways (PAA), as a subsidiary of the already famous international Pan American Airways (PAA) System.

Alaskan Airways, fostered by Carl Ben Eielson, began operation in 1929 as a subsidiary of American Airways (now American Airlines). Pacific International Airways had been formed in 1931 by Joe Barrows and Edward Lowe Jr. Both companies had successfully bid against dog team transport for Star Mail Routes to serve outlying communities during the winter months; these villages were served by river boat during the summer months.

As General Manager of the infant PAA in Alaska, Trippe assigned Lyman S. Peck, with headquarters in New York City. Pioneer Alaskan Airways soon became Operations Manager and with headquarters in Fairbanks, was the day-to-day head of the new company. About a dozen planes were in service, mostly Fairchild 71's which were used on wheels, floats and skis. They were based at Fairbanks and Anchorage. To service the aircraft, construction of a large hangar and shop was begun at Fairbanks' Weeks Field and was finally completed in very cold weather in December, 1932. I had been hired that August as Chief Radio Operator and Engineer and at Fairbanks we built the first aeronautical radio station in Alaska and began installing PAA radio-telegraph equipment in the Fairchilds.

Regular air service was started to many points. With no airfields at most points served, and with no air-navigation facilities of any kind yet available in Alaska, this was rigorous service demanding all the skill and courage of the pioneer pilots with their small single-engined planes.

With all this new Alaskan operation, Pan American was still focused on the fundamental idea of flights through Alaska, across the Bering Sea, through Siberia to the Orient, and its officers apparently worked diligently to obtain Soviet permission for such routes with one or two refueling stops in Siberia. This was the only route feasible with then existing aircraft; the big long-range flying boats were not yet ready to cope with the very long hops between islands of the Central Pacific and there were no airfields in the Aleutian Islands.

By August, 1934, PAA negotiations with the Soviets and with officials of our own government, had developed to a point where the U.S.S.R. authorized an initial survey flight from Nome to Uelen, Siberia, and on down the Siberian Bering Sea coast to Anadyr.

Harlee Branch, Second Assistant Postmaster General of the U.S. and then in charge of all U.S. air-mail services, agreed to go along on this flight. (Branch's enthusiasm for aviation later bloomed into his nomination to the Civil Aeronautics Board and he was Chairman of the CAB for several years.) Robert Thach, a senior Pan Am Vice-President, and Lyman Peck were to accompany him. Operations Manager Joe Crosson would double as the pilot and appraiser of airfields and facilities. Joe took me along as radioman. Cross-

on had often seen Uelen on his flights to and from North Cape, Siberia, during the great search for Eielson and Borland during the winter of 1929-1930, and as there was no known airfield there nor at Anadyr, a Fairchild 71 on floats was chosen for the flight.

We took off from the Chena River at Fairbanks on September 1, 1934, and after an uneventful flight in good weather landed on the river at Nome. I maintained good communication all the way with our station in Fairbanks and during the last hour was also able to communicate with the Signal Corps station at Nome on their ocean shipping frequency (500 kHz).

At Nome we were hosted by the Grant Jacksons in their new home over the bank. It was there that someone came up with the idea that on this flight we would start some air-mail letters westward on a flight around the world. My copy of this letter and its envelope are reproduced here.

With little room available for take-off in the river, Joe took the Fairchild out alone and flew over to the lagoon at Safety. Then, with the weather looking pretty good and a good report from Teller, the rest of us were driven over to Safety and, with a full load of gas, we took off for Siberia. The Sea was not very rough and we flew a bit offshore, quickly passed inside Sledge Island, and were soon abreast of Cape Prince of Wales. From here we knew East Cape, Siberia, about 50 miles across Bering Strait, could be seen on a clear day but it was hazy and overcast and we could not even see the Diomed Islands in the middle of the Strait. We started across and soon came to Fairway Rock where we veered off to avoid great flocks of birds which flew up as we approached. Then we saw Little Diomed (U.S.) and skirted the south sides of both the Diomedes and went on to East Cape. We then turned north, looking briefly at the big Chukchi Eskimo village perched on the cliff of East Cape, rounded the Cape over the Arctic Ocean and were soon over the village of Uelen and the lagoon, on which we landed smoothly. Personally, I felt quite excited returning to Siberia; I had spent the winter of 1929-1930 at North Cape, Siberia, frozen in on the schooner Nanuk. That was where I first met Joe Crosson, and here we were coming back together!

As we approached the beach at Uelen, a large number of Russians and Eskimos ran down the slope to meet us. We were greeted warmly but with questions about our coming. In the crowd were the Soviet "Governor" for Northeastern Siberia and members of a Russian "Polar Station Expedition" stationed there to study conditions in the Arctic and, in particular, Bering Strait, with its severe winter weather and currents, storms, fog and open water even in midwinter.



ROBERT J. GLEASON

(Continued on Page 38)



The Early Airlines 1919-1929

R.E.G. Davies
Lindbergh Professor of Aerospace History
Department of Aeronautics, NASM

The Benoist flying boat was photographed while operating a regular service between St. Petersburg and Tampa, Florida, in 1914. This was the world's first scheduled air service. The 27-km (17-mi.) Florida route lasted only three months.

The U.S. launched the world's first scheduled airline, the St. Petersburg-Tampa Airboat line in 1914, barely a decade after the Wright brothers' first epoch-making heavier-than-air controlled flight. But that 27-km (17-mi.) Florida route lasted only three months, and the next regularly scheduled airlines were not established until 1919. Most of these too were short-lived, although the achievements of Aeromarine in the U.S. were considerable and have not been fully recognized by many airline historians.

Indeed Aeromarine, founded by the visionary Inglis Upperco, was laying the foundation for a practical airline system in the U.S. Aeromarine employed Curtiss F-5L flying boats, which were quite large for their time, and almost a decade passed before aircraft with greater capacity, Ford Tri-Motors, were used. Upperco opened an international passenger service from Key West to Havana, which was also the first U.S. foreign airmail route. He also offered flights in the northeast and the Great Lakes area, switching the fleet on a seasonal basis, operating in the north in the summer and in Florida in the winter. Several southbound Aeromarine flights were appropriately dubbed *The Highball Express*, as thirsty New Yorkers sought relief from Prohibition in Cuba or the Bahamas.

Aeromarine operated the only sustained passenger service during this period. There were other tentative efforts, notably by Syd Chaplin (Charlie's brother) who for a year starting in 1919 operated an airline that flew from Wilmington to Catalina Island. But the U.S.' main contribution to the development of air transport during the early 1920s was in carrying airmail, simultaneously gaining experience in setting up the necessary infrastructure to sustain the operation. But while the U.S. Post Office Air Mail Service was laying the foundation for an extensive U.S. airline system, the pace was being set in Europe and elsewhere.

In Germany before World War I, dirigible airships had carried no less than 34,000 passengers on intercity sight-seeing flights. No doubt the Germans intended to develop regular service, but the war intervened. Oddly enough this was a fortuitous blessing. Airships could not have coped with the growing European traffic volume, and the only possible future for lighter-than-air craft was perceived to be over long distances. Before World War II, no one could visualize the enormous growth of transoceanic travel that was to occur after the war.

After the 1914-18 conflict, Europe turned quickly to air transport while the U.S. lagged behind. The main belligerent countries had built heavy bombers during the latter stages of the war, and these were easily converted for passenger carrying. There had been much disruption of surface communications, so to take to the air was a logical step. Also, the most important European countries at the time, the U.K. and France, were separated by a stretch of sea. Even a ponderous bomber could cover the London-Paris journey in three hours, compared to the eight hours demanded by rail and train ferry. Also, many governments viewed the creation of an airline as a contribution to national prestige.

Remarkably, the harsh terms of the Treaty of Versailles had the opposite ef-

fect than was intended on German aviation development. First, the restrictions on aircraft size and engine power forced designers and engineers to use great ingenuity to produce a superb product, the Junkers F 13. This, the world's first all-metal airliner, carried five people in surprising comfort and was still in service in Brazil in 1947. Second, for many years the Germans were not allowed to fly aircraft into foreign territory, yet (was it a careless oversight?) there were no restrictions on flying within Germany. Thus, by the end of 1920, Germany already had a respectable domestic air network. The foreign problem was overcome by setting up subsidiaries or associates in other countries, which provided a ready market for German aircraft exports.

Other European countries did not lag behind. Backed by a generous government subsidy, French airlines flourished not only in France and neighboring countries but also flew to North Africa and, in direct competition with the famous Orient Express, to Istanbul. The British contented themselves with a few cross-Channel routes but also laid the foundation of their future empire air route network by starting the Desert Air Mail in 1921, from Cairo to Baghdad. The Dutch K.L.M., with the talented Anthony Fokker now supplying civil aircraft, quickly expanded under the direction of Dr. Albert Plesman. The Belgians started the first airline in Africa, in what was then the Belgian Congo, in 1920.

For the record, in 1917 Austria began the world's first regular public airmail service when it linked Vienna with Kiev in support of wartime arrangements to organize food supplies for the

beleaguered capital. Germany began the first domestic air passenger, mail, and freight service in February 1919, from Berlin to the new capital Weimar. France began the first international air route, from Paris to Brussels, the following month. By the summer, no less than five airlines were operating several daily flights between London and Paris.

By 1927 (when the U.S. had only a few airmail routes) almost every country in Europe had its own flourishing airline. Germany dominated the air networks. Deutsche Luft Hansa, founded in 1926 to amalgamate the Junkers and Lloyd groups, reached almost every European capital, the Black Sea, the Caucasus, and Persia. Deruluft, the German-Russian joint enterprise, maintained the air service from Berlin to Moscow. The French had reached West Africa as the first step towards South America, and the British were laying the foundations of their empire air network, drawing on the experience of the 1921 Desert Air Mail and the development of multi-engine flying boats to cross the Mediterranean Sea.

Outside Europe and North America, a dearth of long-distance surface communications stimulated airline progress. In Australia, the first transcontinental railroad was not opened until 1917; the African "Cape-to-Cairo" railway was never completed; only India and Japan in Asia and only Argentina in Latin America could boast good railroads. In these continents the seed of air transport quickly germinated.

In Latin America the first scheduled airline was a little company, TAG, which began regular services in 1920 in French Guiana. This lasted only two years, but the most remarkable achievement was in Colombia, where the first sustained

operation—with Junkers F 13 float-planes—was established by SCADTA, the basic organization of which survives today in the shape of AVIANCA, Colombia's national airline.

There were also early, but unsustainable, airlines in Mexico, Cuba, and Argentina. Mexico's C.M.A. (now known as Mexicana), founded in 1924, can actually trace its corporate history back to an ancestor that served the Tampico oil fields in 1921. Credit should also go to isolated Bolivia, where Lloyd Aéreo Boliviano (still operating under that name) was founded by German settlers in 1925 using Junkers F 13s. Brazilian airlines were a vital factor in the economic development of the nation during the late 1920s. Larger than the continental U.S., Brazil's vast interior, remote, unknown, and unsurveyed, welcomed the transport airplane. One tiny Brazilian airline, VARIG, was to become one of the greatest and most respected in the world.

In Australia, another country where the large cities were separated by long distances, airlines quickly developed from the experience of bush pilots. West Australian Airways and QANTAS, from Queensland, were operating regularly and reliably as early as 1921, laying the foundation for Australia's justifiable claim that in terms of air travel, it was the most air-minded country in the world.

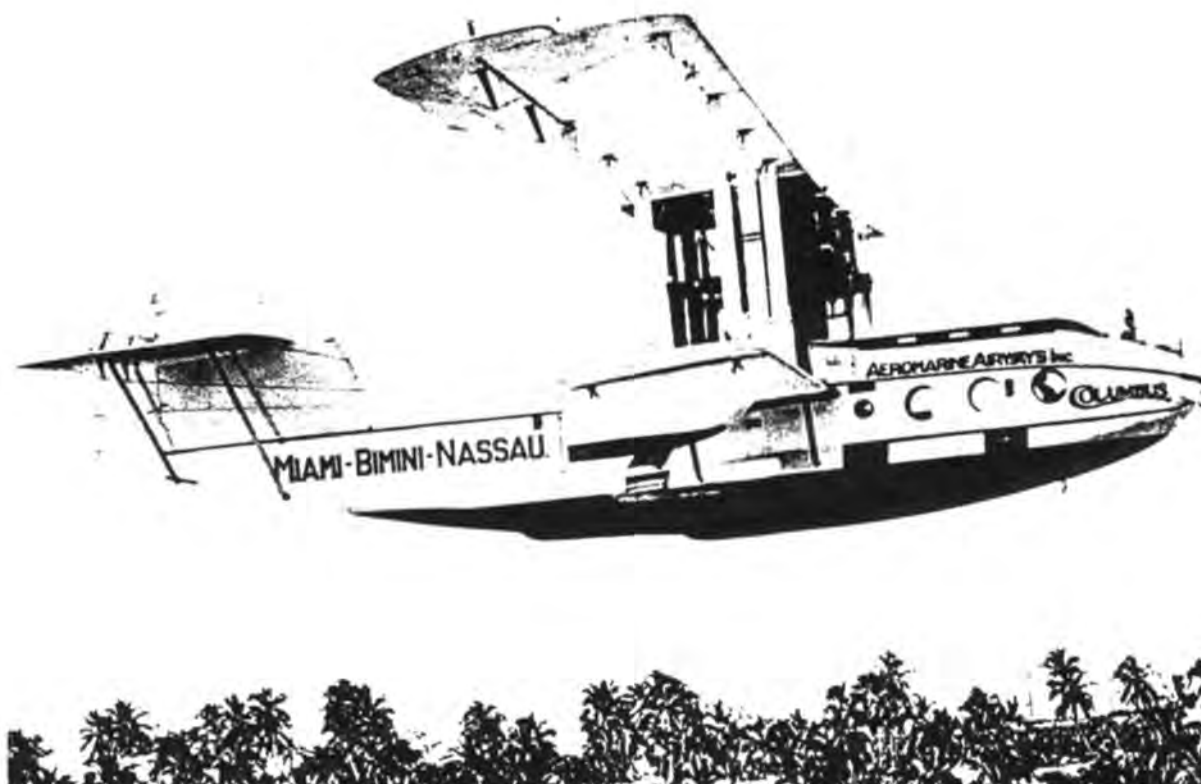
In what was then still romantically called The Dark Continent, the Belgians opened a regular air service along the Congo River. And in Thailand in 1922 air routes extended mail service beyond the rail termini. In Japan too, experimental air services had begun, although an ambitious program by the British in northern China was thwarted by internal political rivalries.

Observing this global activity was a group of concerned citizens in the U.S. In 1926 under the Coolidge administration, the Air Commerce Act was passed, following an epoch-making report to Secretary of Commerce Herbert Hoover. This act established the essential legislative framework within which an air transport industry could be built. It followed hard on the heels of the Kelly Air Mail Act, which authorized the transfer of the airmail carriage from the U.S. Post Office to private contractors, called carriers, a term that has been used to describe the airlines ever since.

Through the airmail payments, the U.S. Post Office retained a tight grip over the new airlines. Unfortunately, the system did not encourage interest in passengers, who had to surrender priority to the mail, carried by about two dozen newly formed airlines. A rare exception was Boeing Air Transport, which actually offered passenger seats on board and was able to outbid its competitors for mail contracts on the strength of the additional passenger revenue.

(Continued on Page 38)

This Curtiss type 75 flying boat was able to carry up to 14 passengers on short flights as early as 1920. The Columbus, which flew regularly between Miami and Nassau, covering the distance of 300 km (187 mi.) in two-and-one-half hours, is shown passing over the island of Bimini. Aeromarine pioneered the first international air services from Florida to the Bahamas and to Cuba. It also received from the U.S. Post Office the first foreign air mail contract, Key West to Havana.



PAA'S



FRO'S

PLAQUE AT DINNER KEY, MIAMI - 1981
R. Conly - Photo

"Golden Age of Overseas Aviation"

By - Ralph A. Conly - 2785-V

In view of the upcoming aviation Special Issue, thought I would pass along some remarks in regard to what I believe was the "Golden Age" of overseas aviation--the late '30's/early '40's (By that time aircraft were in service with a reasonable performance for overseas travel, yet there still existed a distinct "glamor" in such travel. Witness the statement on the placard now in front of the old Dinner Key PanAm terminal in Cocomanut Grove, Miami, that "over 100,000 visitors per month" came to witness the arrival & departure of the Sikorsky flying boat Clippers. On Sundays there were often 3-6 off-duty Miami cops directing traffic!

In retrospect, I remember disliking very much those trips with arrival at Dinner Key on Sundays, since company policy then demanded the crew march off the aircraft in close step to impress the multitude gathered to witness the arrival of us intrepid airmen (& I suppose, the no less intrepid passengers!) on the "giant Clipper Ships" from the wilds of S. America! For comparison, the "giant" S-42 had an all-up (as the British say) gross weight of about 42,000 lbs.--or about the weight of the fuel burned by a 747 in about 123 minutes!

This letter is probably not suitable for publication, but rather is intended to supply (for whoever may be compiling a more systematic history) some background info on aircraft and communications/ DF equipment in service in 1940 on PanAm's Caribbean & S. American routes.

I signed on at PanAm in Nov., 1940 as flight radio operator (we later became more elegant Flight Radio Officers). Had obtained my 2nd class telegraph & 1st class telephone tickets in spring of 1937, after having passed through "Papa" Entwistle's (SOWP #258-SSGP) Massachusetts Radio School in Boston. After wearing my shoes thin on the water front of Boston, discovered that RCA, MacKay, United Fruit, et al, already had several hundred experienced marine operators on the beach and no one was interested in even adding another kid's name on the bottom of the pile. So off to the boonies of Vt. where I scrounged a job as BC opr for the magnificent wage of \$15/wk. Early in 1940 got a query from Mass. Radio asking if interested in a glamorous job flying for PanAm. Chucked the BC job--was making \$30/wk then!--as chief (and only) opr--to go to Miami for interview--no job assured. Got signed on--partially because had 3-4 yrs handling traffic on ham bands with Army Amateur Radio Service, etc. PanAm was just beginning to gather up radio operators in anticipation of much expansion with the coming of war.

In those days PanAm had an "apprentice" program for all flight crew members. Future FRO's spent some time on practice CW circuits to learn PanAm procedures, etc., then were assigned to radio shops where they were flunkies for the regular radio service mechs, checking out aircraft radios, changing/servicing planes batteries, or any other menial work that could be dreamed up. Also got handed 2

DINNER KEY

Picnickers in sailboat days gave the key its name. In World War I, it was a Naval air base. In 1930, Pan American World Airways here inaugurated flying boat service to Latin America, erecting huge hangars and a terminal. The U.S. Government dredged first channel in history especially for aircraft. Over 100,000 visitors a month came to see the giant Flying Clippers.

Coast Guard established seaplane base in 1932. In World War II, Navy and Pan American operated flying boats here until Latin American airports built for hemispheric defense enabled use of more economical landplanes. City of Miami purchased key in 1946.

boxes of junk parts representing a regenerative rcvr, and an MOPA transmitter and were required to put them together and make them work. Since that was the only way hams got gear in those days had no problem getting through that exercise with flying colors! Finally got to fly on one of the more obsolete aircraft used for pilot training, etc.--typically the Sikorsky S-38 "Duck", a 2-engined amphibious flying boat. These aircraft served originally in making survey flights (circa 1928) thru the Caribbean & S. America (often with Chas. Lindbergh as pilot), then later were used for passenger service in the early '30's. A Duck would be checked out to 3-4 Jr. pilots-in-training, and the lucky FRO assigned spent the day alternately porpoising & submarining on Biscayne Bay, or having his fillings shaken loose by landings on the grass portions of the old 36th St. airport, as each of the Jr. pilots tried desperately to get rid of that Duck!

Radio gear in the Ducks was typical of that on most of the flying boats at that time (1940). Most radio gear--both a/c and ground station--was designed and produced by a PanAm-owned engineering/fab group, Pamsco, in Coral Gables, Fl. The aircraft were equipped with 2-tube (76's) regenerative receivers with plug-in coil for band change.

There were usually 2 rcvrs--one for communications and one for direction finding work. The DF rcvr had a i-tube RF amplifier patched between the DF loop and the rcvr to compensate for the low signal pick-up of the loop. Most a/c used a small (about 6" dia.) loop enclosed in a streamlined & electrostatically shielded plastic "football"--mounted on top of the fuselage (naturally--since the bottom was under water periodically!). One exception was that the rather ancient S-40's--in 1940 still used for hauling wealthy college gals to Nassau on vacation--which had a rather large, flat bow area, used crossed-dipole wire antennas like some ground-based systems and a goniometer search coil for direction read-out. Fortunately by the time I got on the S-40's, they were forbidden to fly in instrument weather conditions; bearings obtained with the non-serviced, non-calibrated goniometers might be within 60-70 deg. accuracy! Nevertheless we were supposed to take a plot bearings for practice--even though we might find the results showed we were in the middle of the Everglades, while actually on the way to Nassau!

(Continued Next Page)



(Continued from Page 20)

Typical a/c transmitter was a 2-tube (type '10's) MOPA with plug-in oscillator & PA coils for frequency change. HV was furnished by dynamotor; most ships had only one transmitter. A short fixed antenna was provided for take-off/landing or for limited range comms, and a trailing antenna with about a 4 lb ball-weight was reeled out using a hand reel if one expected to be more than about 10-15 miles from the assigned guard station. The xmtr on the S-43 was mounted in the tail under the stairs from the main passenger entry hatch. Took me several flights holding up the stairs on the back of my neck (& cursing out the dumb engineer who installed it) while reeling out the antenna before I found there was a small catch to hold the stairs up! An interesting result of the "no instrument flying" with the S-40's was that many a flight Miami-Nassau was made under the overcast--i.e. about 50 ft. above the water--and therefore it was impossible to reel out for fear of dragging the ball-weight in the water. This sometimes resulted in some ripe comments from the air/gnd opr at WKDL, Dinner Key, since the short fixed antenna did little to enhance the big 10 watts or so put out by the '10 final amp. The restricted flying also resulted in one "unscheduled" overnite at Cat Cay, 50 miles east of Miami one night when hurricane conditions prevailed at Miami. The co-pilot and FRO (me) were assigned to "watch" the plane at anchor. About 3 AM all 4 engines were being run at near full throttle to keep the anchor from dragging. There was a statement made about the S-40's in those days--"They taxi at 70 knots, take-off at 70 knots, cruise at 70 knots and land at 70 knots." Possibly not far from the truth. There were also tales told about S-40's on return trip from Havana (which essentially overheaded the Key West-Miami highway) being passed up by the cars on the ground below.

About 1941 the S-40 was relegated to non-passenger service when PanAm acquired contracts to train both U.S. & British/Canadian flight navigators. The remaining 2 or 3 Consolidated Commodore 2-engined flying boats were also assigned to navigation flights. These navigation flights always required FRO's aboard & created some interesting situations--like one S-40 flight with some 40 nav students plus 2-3 experienced nav instructors getting "lost" & nearly running out of gas off West Palm Beach! A favorite "trick" of the neophyte navigators was to check their charts & find some marine beacon which would give them a nice line-of-position, then rush up to the FRO & say--"Sparks, get me a bearing on Fowey Rock." Of course Fowey Rock had an output of about 1 watt, came on only at 00-01 past the hour, and was 150-200 miles away.

Passenger service throughout the Caribbean in 1940-41 was handled by the later type S-42 (introduced in 1943) 4-engined, and the S-43 "Baby Clipper" 2-engined flying boats. A few of the S-43's were amphibians--altho the wheels were used mainly for hauling out at the main Dinner Key base--since there were few land airports suitable. It was necessary to attach accessory wheels to the S-40's, S-42's and the non-amphibious S-43's when hauling out at Dinner Key for service after flights.

The radio gear on S-42 & S-43 aircraft was still the afore-mentioned Pamsco regen rcvr/MOPA xmtr. One might think that PanAm was rather backward in introducing more modern equipment--which was true to a



View of PanAm's main seaplane base at Dinner Key, Coconut Grove, just south of Miami, FL. Date is probably 1941-2. A rather unique photo in that all types of flying boats in use at that time for any purpose are shown. In left foreground the 4-engined Sikorsky S-42 is taxiing out from the dock; at right is a 2-engined Consolidated Commodore. Immediately above the launching ramp at left is a "Baby Clipper" S-43; just above it near the line of trees on left is (I believe) the 2-engined Sikorsky S-38 "Duck". On the right, in front of the second hangar is a Sikorsky 4-engined S-40; behind it is another S-42. The terminal building housed all flight operations, traffic reservations, etc., and the main radio station WKDL, receiving positions - all CW. Photo by R. Conly, SOWP 2785-V.

degree--but it was a real tribute to the design and serviceability of the Pamsco equipment that it was still giving effective and reliable communications into the early '40's. Also, PanAm was phasing out the flying boats at the time, replacing with DC-3's and the Boeing 307's as land airports became available. These new land planes had Pamsco-designed superhet rcvrs both for comms & DF work, with a clever auto-DF circuit driving a mechanically-coupled loop rotation system which still allowed manual control of the loop in situations where manual DF was superior to the ADF. Transmitters were 2-channel, crystal-controlled rigs with about 75 watts output from a pair of 807's.

Typical frequencies in use for air/ground in the Caribbean/S. American area were 3082 kc for night and short range daytime work, and 5495 kc. for longer range daytime work. In addition, DF frequencies typically about 1688 kc. were used in the aerophore transmitters--most of which were on-demand only by request to QTG. Some ground-based DF was available--notably in the Canal Zone which had military Adcock installations, but few FRO's would bother to use unless the Skipper specifically requested. The "modern" loops were very effective and gave accurate results for a/c navigation and radio instrument let-downs. In the flying boats all communications and DF was the responsibility of the FRO. Even landing instructions and clearance was by CW, as there were no 'fone installations aboard. In fact, this was also true of the DC-3's used on the Miami-Rio-Buenos Aires run. The Boeing 307 Stratocruisers did have an experimental AM radio-phone installed in the cockpit but not many skippers were interested in fooling with it. As for CW--company rules required a contact with a ground station by each aircraft at least once every 10 minutes. After more than 15 minutes without contact an "out of communications" report was required to explain why. Such things as rain static 40 db over S9 or a malfunctioning xmtr were not necessarily considered adequate reasons for out of comm! Sometimes using the electrostatically shielded loop on DF frequencies would reduce rain static enough to enable comms; as to the dead xmtr--you were supposed to fix it! Any FRO with more than a couple or so out of comms would be assigned to the radio shop (on a day off) to melt scrap lead and make trailing antenna ball weights.

It must be realized that up until WWII there was very little after-or before-sunset flying in the Caribbean/S. America area. One exception was the Miami-Balboa run in Boeing 307's, which being about 11 hours. flight plus turn-around time at Balboa, made arrival back in Miami about 10-11 PM. Otherwise the boats made daytime-only flights--passengers and crew overnighted together, and went on their way on the next leg shortly after sunrise. Typical S-42 flights were Miami-Havana-Miami (2 trips a day);

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Sikorsky S-42 Docked at Dinner Key base.
Photo - R. Conly

PAA—Golden Age—Conly

(Continued from Page 21)



Miami-Cienfuegos (Cuba)-Barranquilla (Columbia)--1 day; Miami-Port au Prince (Haiti)-Maracaibo (Venezuela)--1day. The Baby Clipper S-43 was used on a so-called "Cook's Tour" of the Caribbean--island jumping from Miami to San Juan, to Trinidad via the Windward Islands, return to San Juan, thence to Port au Prince, to Kingston (Jamaica), back to Port au Prince, and back to Miami. This was a 10-12 day trip. Another major itinerary of the S-43 was Miami-Rio de Janeiro via San Juan (day 1); Port o'Spain, Trinidad (day 2); British, Dutch & French Guiana to Belem at the mouth of the Amazon (day 3); Sao Luis, Forteleza, Natal, to Recife (day 4); Salvador, Victoria, to Rio (day 5). There were also numerous "flag stops" in between the named "major" cities depending on the traffic on each flight. Although the crew would be at the dock at sun-up & leave the arrival dock at sunset, we might get only 4-6 hrs. of actual flight time. The typical Mia-Rio-Mia flight time was about 80-82 hrs. One interesting aspect of the S-43 trips to Rio--as far as the FRO was concerned--was that he was responsible for picking up the bow line from a bouy at each stop with a grappling hook. Since some of the stops were at a floating dock in the middle of a river with considerable current flowing, it sometimes was no mean feat to pick up the line on the first pass (and most Skippers were very unhappy to have to circle and make a second pass as in some cases maneuvering room was extremely restricted). I earned the sobriquet "Cowboy" on one trip to Rio by successfully picking up 42 of the 43 bow lines on the first pass! Then there's the sad story of the FRO who used an over-zealous backswing while picking up the line at Victoria, Brazil, and heaved the grappling hook through the plane's windshield. The plane and crew were marooned in Victoria for a week while a new windshield was flown from Miami and installed!

Present day crews and service mechs should appreciate the ingenuity displayed by some of the old-timers. For instance, on one flight an S-43 lost an engine shortly after take-off from Port o'Spain enroute to Georgetown, BR. Guiana. It made a successful emergency landing in the mouth of the Orinoco River--but now what? Simple--a new engine was flown from Miami in an S-42--along with a couple of good aircraft mechs,--the defunct engine was removed from the wing piece by piece, the new engine was dismantled and re-assembled in the wing of the S-43, likewise piece by piece, fired up and the Baby was back in service!

In the late '30's/early '40's PanAm had been chosen by the U.S. Govt. to construct a series of airports eventually providing adequate facilities for both military and commercial land aircraft from Miami, along the eastern coast of S. America to Natal thence across Africa (via a separate entity--Pan Am Africa). Therefore in the early '40's DC-3's to Rio were operating in parallel with the S-43 Baby Clipper service. This DC-3 schedule was still daytime-only flying, but cut 1 day off elapsed time Mia-Rio since it cut across the "hump" of Brazil via a PanAm built airport on the Brazilian plateau at Barreiras--about midway between Belem and Rio. The '40-'41 Barreiras airport manager



Consolidated Commodore on ramp at Dinner Key base.
Photo - R. Conly



SIKORSKY - S-40

was a German national whose hobby--between the twice weekly planes--was hunting large cats, e.g. jaguars, on the airport runway. Believe at the start of WWII the manager was replaced.

One of the highlights on a Rio trip for any FRO was his first "for real" complete instrument let-down at Rio, where the airport was on an island in the middle of famous Rio harbor with very high mountains virtually surrounding it. The "let-down" procedure called for all DF by the FRO. Initial position was determined by overheading a beacon at the airport. Then the Skipper made timed runs and controlled descent while the beacon was "boxed"--i.e. a square pattern was flown maintaining the beacon at the exact center of the pattern, thus establishing a known position in relation to the airport during the descent--hopefully clear of the mountains! Prior to final approach a long run was made out away from the airport--and toward the mountains--until passing abeam a second beacon, a 180 deg. turn then brought the plane back toward the airport, and FRO "homed" on the airport beacon for final approach. On the older aircraft with regen rcvrs, and because of the particular beacon-frequencies in use at Rio it was necessary to change plug-in coils--2 in RF amp & 1 in rcvr--many times during the let-down, which took 30-40 minutes. Woe to the clumsy FRO who dropped a coil into the bilge--thus interrupting the steady flow of bearing call-outs the Skipper wanted during this critical operation! My first let-down (fortunately in a DC-3 with good rcvrs) was after an unscheduled overnite at Belo Horizonte--otherwise we would have had to make the Rio let-down after dark--a very distinct "no-no" in those days. We approached Rio with solid undercast reaching about to flight level of 10,000 ft. It was easy enough to find the general location of Rio because standing on top of the clouds in all its glory was the 100 ft. high statue of Christ the Redeemer, which is perched on top of Corcovado Peak. After overhead the first beacon, we dropped into the soup and after 30-40 sweaty-palm minutes through the let-down procedure we broke out at 300 ft. over the harbor & lined up with the runway.

With the advent of WWII, PanAm became more directly involved with military transport (also on the west coast with Naval Transport--but my "memoirs" are only of the east coast). LA separate division was formed to handle this work--the Africa-Orient Division, formed in early '42. Initial effort out of Miami was numerous C-47 (military version of the DC-3) flights to Natal, Brazil--and other destinations. Radio gear on these a/c was the old army "command sets"--both rcvr and xmtr which were not bad equipment--except that in many installations tuning was through a remote head and long flexible cable, which sometimes developed considerable back-lash. (Many thousands of these sets were made for the military, showing up on the surplus market later and used by many hams, etc). DF gear was Bendix with "auto-DF" feature, controlled by the pilots. In the event "manual" DF was desirable--due to night shift or other DF anomalies--the FRO might make usually futile attempts to get a bearing by using the Rt./Left switch provided for loop control.

A long range transport system was inaugurated in later '42, using the new C-54 (prototype of the DC-4). Radio gear on these a/c was the military BC-348 superhet rcvr and the BC-375 xmtr--notorious for its 8-10 large plug-in frequency control units which to

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gether took up 2-3 times the space of the xmtr-- which itself was huge by a/c radio standards. The BC-375 had a giant keying relay (which surprisingly would follow bug sending up to 30-35 wpm, but sounded as tho it might jump out of the xmtr on occasion). The DF set-up was the mostly-unusable, except for homing, equipment used on the C-47's. Due to a shortage of C-54's when they were first introduced, we also had a few B-24's with plywood floors installed in bomb bays for cargo carrying, and later a few C-87's--cargo versions of the B-24. Since these a/c were strictly combat versions (expected life in combat=100 hrs.) they were usually a long way from commercial standards, therefor not too popular with the flight crews. As an example, in 2 yrs flying with commercial equipment I encountered 1 engine failure on an S-42 flight to Havana. In the military operation engine failures were rather routine--sometimes 2 on the same flight.

The route for C-54 service (dubbed the "Cannonball Express" either by zealous P.R. men, or by the press after a few slugs of bourbon) was from Miami to Karachi, India via San Juan, Port o' Spain, Br. Guiana, Natal, Ascension Island, Accra (Gold Coast), Khartoum (Sudan), Aden, Masirah Island (off coast of Arabia), to Karachi. At Karachi the cargo was transferred to military or Flying Tiger a/c for transport over the "Hump" into China. Return cargo for the PanAm service was often (unhappily) the many critically wounded G.I.'s being returned to the States. Towards the latter part of WWII the Africa-Orient Division was transferred to LaGuardia Field, NY with routes NY-Stephenville/Gander (Newfoundland), Azores, Lisbon, Rome, Habbaniyah (near Baghdad), Karachi.

As WWII ended, PanAm started to receive Lockheed Constellations, and some of the wartime C-54's were converted to DC-4's. Radio gear on the Connies was usually a Bendix auto-tune rcvr and the Bendix auto-tune ART-13 xmtr with 813 final and in the order of 200 watts output on any of 10 pre-tuned frequencies. Modern gear had finally arrived! We even had electric reel motors for reeling out & reeling in the trailing antennas. However, all was not always rosy--occasionally the reel motors would fail, necessitating a mad scramble into the belly compartment with a pair of dikes to clip off the trailing antenna. For some wierd reason most Skippers were averse to making landings with a 4 lb. ball weight dangling from 70-200 ft. of wire under the belly of the plane!

With the coming of the Connies, one might say the "modern" overseas air transport had arrived. However, for comparison with present jet schedules, direct NY-London Connie flights were about 11 hrs. air time eastbound. On westbound flights, against prevailing North Atlantic headwinds--especially in winter time, there were stops at Shannon, Ireland and Gander, Newfoundland; even then the required fuel was such as to limit payload in some instances. Typical Connie westbound flight time was in the order of 16 hrs. I was aboard a C-54 westbound across the North Atlantic on one trip where we were making barely 60 mph ground speed.

After WWII the "glamor" of being a flight crew member greatly diminished, in my estimation. While there were still a few more years of "fun flying" it rapidly became less interesting, more demanding type of job as aircraft spanned longer and longer distances in shorter times--also allowing less time on the



SIKORSKY S-43 (Pan Am World Airways Photo)

ground for crews to have fun. Perhaps some small compensation is the present rather munificent wage scales--at least for the "professional" cockpit crew members! However, I think I had a lot more fun as flight radio operator on the Baby Clippers--at \$100/month!

After WWII a concerted effort was mounted by all overseas airlines to convert from CW to pilot-operated fone communications--thus eliminating the FRO. Altho fone operation required substantial investment in ground and aircraft equipment, apparently airline management considered it worthwhile. Most overseas airlines were operating without FRO's by the early '50's. Quite a few PanAm FRO's flew as passengers for a year or so on flights in Brazil due to a Brazilian law requiring a licensed radio opr aboard all aircraft--the law was changed. It pains us old CW operators to admit it, but with modern side-band equipment in the a/c--and with multi-million dollar ground station networks--the pilots are able to maintain adequate communications without us!

For anyone interested in wider detail regarding PanAm's early contributions to aviation, I would heartily recommend the following publications:

The Story of the Winged-S; Igor I. Sikorsky; Publ. Dodd, Mead & Co., New York

Sea Wings--The Romance of the Flying Boats; Edward Jablowski; Publ. Doubleday & Co., Inc., Garden City, NY.

An American Saga--Juan Trippe and His PanAm Empire; Robert Daley; Publ. Random House, New York.

In case this lengthy hangar-flying epistle gets notice in the Journal, it might be mentioned that I have compiled a list of the old-timer PanAm communications group. While I believe it has been well distributed, if any PanAm oldtimers-- or others-- would like a copy a card to my QTH in the SOWP directory will work (couple of U.S. stamps would be helpful).

Best 73, Ralph Conly "VT"
SOWP 2785-V

QTH:
Ralph A. Conly - N6VT
12521 Henrietta Avenue
Sunnyvale, CA 94086



FOLKER F-7 (PanAm World Airways Photo)



Log of a FRO across the Atlantic on PAAF's Ferry

MARAUDER TO AFRICA

By- James L. Mulhern



For a few months in 1942, with Pete Fernandez (now Senior Vice President of SOWP) as my boss, I served as Chief Flight Radio Operator for Pan American Air Ferries, Ltd. Our Job was to ferry military aircraft from the United States to any place. We had a remarkable collection of Pilots, navigators, flight radio operators and ground support people. The aircrews, with every kind of flying background imaginable, included many escapees from the more conservative flying jobs. Generally speaking, I suppose we were all mavericks to one degree or another but it is fair to say we had one thing in common--we were skilled airmen with a strong dedication to self-preservation.

PAAF delivered many aircraft of numerous types, including some of the original short wing Martin Marauders as they were known in the RAF, or the B-26 in U.S. Army Air Corps parlance. For long distance ferrying the planes were fitted out with four fuel tanks slung in the bomb bay plus an effective complement of communication and direction-finding gear.

I flew just like everyone else and early one morning I was in the radio operator's position of a B-26 outbound from Miami. Our crew consisted of Captain "Phantom" Brown, a stunt pilot, wing walker and all around aerial circus type. "Trig" Swindle was co-pilot, a very young and talented lad who was later lost in a military operation in the China/Burma/India theatre. The navigator, whose name I don't remember, was a former deck officer in merchant ships but was heard to say he'd gotten fed up with being exposed to German U-boats. My flying career, begun in 1929, included operations in South America and elsewhere with time out for five years as a ship's radio officer.

Our aircraft was comfortable as long as all systems were "go". We were well equipped with miscellaneous flying and survival gear. For in-flight and possible emergencies there was ready-to-eat food, including that ever-present WWII staple, Spam, and a collection of delicacies which looked like something out of a Fifth Avenue specialty shop. There were even Peak Fream biscuits from England and we wondered how they had managed to make it across the war-torn Atlantic.

The aircraft had the usual array of machine guns, loaded and ready to go. However, some level-headed policy maker had decided ferry crews should not be given even the slightest opportunity to fool around with the armament (a wise decision) and the gun-barrels were plugged and taped, which also protected

them from corrosion until such time as the aircraft went on combat status. Our aircraft proudly displayed USA and RAF registration symbols--US17390 and FK-120. To this day I can't remember what our radio call sign was. Something cryptic I'm sure and just valid for the ferry flight.

The take-off from the Miami 36th Street Airport was on the dramatic side. We were "over gross" and just prior to lift-off--after a long run--the Curtiss Electric propellers "ran away". Only some sleight-of-hand on Trig's part brought them under control though not before we had staggered over LeJeune Road just clearing the tops of the cars. Other than that the operation was what passed for normal in those days, and eight hours and thirty two minutes later we were in Trinidad for an overnight stop. Every time I hear the WWII tune Working for the Yankee Dollar I recall that particular night. We slept in tents located in a swampy area and after some depressing chow were lulled to sleep by the croaking of frogs. The next morning (I still wonder who it was ordained that all take-offs be at dawn) we were up and away to Belem at the mouth of the Amazon. If I remember correctly the name of the airport was Val De Caes which I think is Portuguese for Valley of the Dogs. For this overnight stop we were lodged in a fairly comfortable hotel downtown. Those readers who may have transited Belem in those days will remember Madame Ze Ze's, the pleasures of which we had to forego because of an early departure the next morning for Natal on the Brazilian sea coast. Natal is a place I think of kindly and it was here that our aircraft was given a careful servicing for the long haul across the South Atlantic.

From Natal we flew to Ascension Island, cheered on by hackneyed expressions of the time such as "if I don't make Ascension the wife gets the pension" and some that shouldn't be printed. The entire area of Ascension is only 34 square miles which made it a pretty small target on a long overwater flight in the old days before the advent of Loran, Omega and other navigation aids.

We found Ascension without difficulty, that day its radiobeacon not being interfered with by signals from a lurking German submarine as sometimes happened. The submarine was generally referred to as "Willie off the pickle-boat". The runway at Ascension was an engineering marvel. To quote Ivan Dmitri, author of Flight to Everywhere, surveyors said of Ascension Island "a crow would break his leg trying to land here", but our engineers carved a 6,700 foot runway out of a ragged jumble of lava rock in 91 days. The appearance of the runway was deceiving as the first half went uphill to a crest beyond which there was about 3,500 feet left. Even though it went downhill it was long enough to permit roll-out of the aircraft of those days.

The airfield at Ascension was named Wideawake. I believe it got the name because of the racket made by the untold thousands of Eastern Sooty Terns which also used the island. Despite construction activities and airplane traffic, huge colonies persisted in maintaining nesting grounds at the end of the runway and were a constant hazard to landing aircraft. Living conditions at Wideawake for transient flight crews were primitive--tents set up in a lava strewn area, minimal food, and practically no water. The weekly ration for permanent personnel was five gallons per man for all purposes. Bathing was a problem and was accomplished in the open using small battered tin basins and water carried in cans.

After the usual early morning departure from Ascension we set off across the Atlantic. During the flight Phantom asked me to check the gas tanks in the bomb bay and I ventured out along the catwalk in that drafty creaking cavern, inspecting piping, valves, etc. I was startled to find a leak and at first thought it was gasoline but a closer examination disclosed it to be only hydraulic fluid, the minor loss of which was of no concern compared to leaking fuel.

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AFRICA



Africa Bound via PAA F—Mulhern



Our first landing in Africa was at Accra on the west coast in what was the Gold Coast Colony, now Ghana. It is about 300 miles north of the equator and its seacoast was beautiful with huge waves crashing on the shore. It was here that another problem arose. Inspection of the aircraft revealed that the tire on the left main landing wheel was soft. (Phantom said he wondered why "she pulled so----hard to the left after we touched down".) We were advised it might be weeks before replacement tires would arrive and the aircraft was moved to a remote part of the airport. As a long indefinite delay in Accra held few attractions, we took matters into our own hands and one night surreptitiously got the tire off the wheel and patched the hole in the tube with an automobile tire cold patch which Phantom had somehow managed to obtain. This was a highly irregular procedure but it worked. After three nights in Accra we were again on our way, all of us strongly advising Phantom to favor that left wheel on landings. He did and the patched tire held up until we finally got rid of the aircraft. For all I know it may well have gone into combat that way although the item was covered in our delivery report.

From Accra We went to Kano, Nigeria, of which my only memories are that it was hot and uncomfortable. After a poor night's rest we were glad to take off for Khartoum on the headwaters of the Nile River. I liked Khartoum and enjoyed our one night stand there. It was here we learned our final destination was an RAF base designated IG224 located in the desert not too far from Cairo, Egypt.

From Khartoum we flew northward along the Nile at a fairly low altitude in bright sunny weather. We even took time out to circle the pyramids. Approaching IG224 we had no contact via radio but we saw a green light from what we assumed was control and landed. On the ground everything was confusion with people and vehicles hurrying about in all directions. Someone told us that Rommel's Afrika Korps was thought to be about ready to overrun the place and abandonment procedures were being followed. He advised us to get the hell out but fast or we might wind up being guests of the Germans. We were told that No. 14 Squadron (the RAF unit that operated Marauders) had left and that the fuel supply had been destroyed. We could indeed see the fires. We were also informed that they almost shot us down as they had not been advised of our arrival and thought we might be an enemy aircraft. Take the plane to Fayid, they told us--another place about which we knew nothing. It was near the Bitter Lake close to the Suez Canal, an RAF officer said, and he gave us a heading to steer. With little choice we climbed back on board and departed, hoping that the Luftwaffe wasn't too alert and that there was enough fuel in the tanks to get us to Fayid.

At Fayid, in contrast to IG224, all was peaceful and quiet. It was a Saturday afternoon and the war was turned off except for some mechanics who immediately started to remove from the aircraft what they considered non essentials, such as the APU, armor plate and other heavy equipment we had at such cost brought across the Atlantic and Africa. The officer who would normally have accepted delivery of the aircraft was in Cairo. The man in charge didn't care much for Yanks or Martin Marauders. I guess we were just one more headache. He refused to sign the delivery receipt but said we could use their mess until we left which he hoped would be soon. Bearing in mind the necessity of getting a receipt for the aircraft, we got the help of some of the other officers and our reluctant friend finally signed the delivery papers. We said goodbye to our B-26 and went by car to Cairo.

Later I learned that No. 14 Squadron, also known as Dominion Squadron because so many of the aircrew were from Australia, New Zealand and South Africa, began operating out of Fayid shortly after we left our Marauder there. Their first operational flight was a reconnaissance to the Aegean Sea. The Squadron Commander flew the aircraft which was flown at an altitude of 50 feet all the way, a round trip of 1,600 miles. I wonder if the aircraft was FK-120?

We arrived in Cairo just in time to experience a bombing raid by the Luftwaffe, one of the few times Cairo was bombed in WWII. I sweated out the raid in company with an Australian infantry officer just in for R&R after desert fighting. We were in Shepherd's Hotel, crouched in an arched doorway, a bottle of Australian whiskey between us until the all clear sounded.

In Cairo our crew split up and we made our separate ways back to Miami aboard transport aircraft operated by Pan Am Africa and TWA. My log of the flight shows the following:

8/19/42	- Miami/Port of Spain	- 8h32m
8/20/42	- Port of Spain/Belem	- 5h58m
8/21/42	- Belem/Natal	- 4h50m
8/22/42	- Natal/Ascension Is.	- 6h45m
8/23/42	- Ascension Is./Accra	- 6h10m
8/26/42	- Accra/Kano	- 3h28m
8/27/42	- Kano/Khartoum	- 7h48m
8/28/42	- Khartoum/IG224	- 4h26m
8/28/42	- IG224/Fayid	- 30m

When I last visited the Aerospace Museum in Washington there was on display the front end of a B-26 in very good condition. The navigator's station had been stripped but the rest of the equipment was there to be marveled at. Every time I see it I find it difficult to believe I actually flew in such things but at the time it was all happening we truly felt "we never had it so good"--which was probably true.

HOMING PIGEON SAVES NAVY AVIATOR'S LIFE

The following article appeared (in part) in the BOSTON GLOBE, March 13, 1983, under the by-line of Paul Langner, Staff writer:

John Perrin, a retired financier and one of the nation's earliest naval aviators - who owed his war-time rescue from the North Sea to a carrier pigeon - died Friday at his winter home in Coconut Grove, Florida. He was 87.

Mr. Perrin, a member of the Harvard class of 1920, left college in 1917 after his freshman year for service in World War I, and became a Navy pilot. He was commissioned an ensign in December 1917, and was given Aviator's Certificate No.202.

After instructor's duty in Pensacola, Fla., he was posted to Britain where he was attached first to the Royal Flying Corps and then to the Royal Naval Air Service, flying missions in defense of London against zeppelin raids and later antisubmarine patrols.

He flew Sopwiths and Snyders: single-seater aircraft fitted with two pontoons and two machine guns, and carrying two 65-pound depth charges for use against submarines.

On one of these missions his plane was disabled by gunfire from a ship, and crashed into the North Sea. Like many aviators in the days before onboard radio, Mr. Perrin carried homing pigeons, and he released one of them with a message giving his location.

Among his duties as a naval aviator had been the checking of the location of buoys, and he happened to ditch near one of the buoys whose location he knew by heart. He swam to the buoy, tied himself to it, and released the pigeon. He would later recall that the pigeons he carried had been trained to alight on a seesaw at the naval base in Norwich, where they would be fed. The rocking of the seesaw would ring a bell, alerting base personnel to the pigeon's arrival.

Mr. Perrin's pigeon landed on the seesaw as it had been trained to do, his message was found, and a boat was dispatched to pick him up.

Mr. Perrin was discharged as lieutenant (j.g.) on Jan. 13, 1919, and returned to college briefly.

W1GNW - L. M. Nordlinger 4013-M

AMERICAN AIRLINES



COMMUNICATIONS 1931-1941

A History of the American Airlines Communication System 1931-1944

The Early Days

By- M. D. Hall

IN THE LATE 1920's, a number of fledgling air transport companies were emerging, as aircraft capable of carrying passengers began to appear. Among these was the Canadian Colonial and American Airways. These outfits would soon merge and become known as American Airways. Air mail contracts were being awarded and scheduled passenger flights rapidly becoming a reality.

At this time, men of vision, who were experienced in point to point radio communication, began to put into operation the first of a series of radiotelegraph and radiotelephone stations which they knew would be required to make flight control operations a success. The first stations American Airways put into operation were at Dallas, San Antonio and Waco to handle operations and weather traffic.

Mr. James G. Flynn--567-SGP--W5Z0, is recognized and credited with the planning and implementing of this system which, in a few years would stretch from coast to coast with more than 35 stations in operation by 1940. Mr. Gil Mears and Geoff Rayburn supervised the installations and the operation of this giant system considered the largest in domestic airtransportation.

Many sea going telegraphers were leaving their ships for land based jobs in the new air transportation business and many stayed with AA until their retirement. A significant number of first fifty or so of these men on the seniority list of radio operators went on to become flight controllers, navigators, pilots and some eventually executives in the American Airlines Company.

In the middle thirties, Newark was the Northeastern operations headquarters with Chicago in the mid west; Ft. Worth in the southwest and Burbank on the west coast. These stations functioned as Flight Control centers with the largest concentrations of operations; maintenance and communication personnel.

The radio circuits were aligned with the Air Mail routes and the operations connected with these routes. AM-18 was the non-stop route to BW from NK. AM-21 ran from NK to AZ; SR; RC; BJ; ER and CV. AM-7 was normally a non-stop to CG. AM-22 served the route from CG to WA via Elkins and Charleston. AM-30 ran from CG to DL via LS; TS and OL. AM-23 was the transcontinental route from NK to WA; NA; PS; LI and DL with occasional stops at Tri-Cities and Knoxville.

In the early days Ford and Fokker tri-motors were used and the Fairchild Pilgrim served many of the cities in Texas. Later the Curtiss Condor was popular as a sleeper until replaced by the DC-2 and DST and finally the DC-3. Stinson A/T and U were used on AM-22 and AM-25.

Weather stations with radiotelegraph and radiotelephone were located at Beaumont; Brownsville;

and Guadeloupe Mountain in Texas. The Guadeloupe station was located on the highest elevation in West Texas at approximately 8751 feet! It was 65 miles from the nearest town and the operator had to cook for himself! Douglas, Arizona which was a stop in the early days, was located in a remote mountainous region at a very high altitude for DC-3's. The altimeter settings at Douglas had to be very carefully checked by the radio operator before a flight landed due to the rugged terrain and length of runways.



THE FAIRCHILD F-10

WACO, TEXAS

1932

The photograph of the American Airways hangar, at Waco, Texas is one of the earliest installations of the fledgling airline. It is obvious to the viewer that no airplanes are present and a good reason why AA achieved it's reputation is that there were never any " Hangar Queens ".

It is certain that the " Tin Goose " made stops here but not so well known is the American Pilgrim, an 8 passenger-single engine with a pilot! No second officer or stewardess and box lunches were passed out in flight!

The hangar served as Managers office, waiting room and Radio room, nearly fifty years ago!

The autos parked near the hangar are Ford Roadster and Coupe belonging to Dave Easton and a mechanic named " Red " Goss.

Thanks to Mr. Dave Easton for this historic picture.



(Continued on Page 27)



The Combination Operator

In the early years of American's existence the radio operator played a big part in the operation of the air transportation business. He was a man of many talents and usually had been to sea as a telegrapher; could maintain his own radio equipment; make weather observations and fuel the airplane if called upon to do so. At the smaller stops this was the rule rather than the exception. The radio operator, in addition to sending messages would be required to take off and load registered mail pouches, run the ramp up to the plane for embarking and debarking, set the landing gear pins and plug in the auxiliary battery cart. At some airports, the wind factor made it necessary to attach a block and weight to the vertical stabilizer so that the DC-3 wouldn't "fish-tail" on the ramp. At those fields where there was no control tower the operator would give the pilot the wind direction, runway availability and altimeter setting. In addition, the operator might be asked to announce the arrival on the P.A. system, giving the previous stops. At those stops where only two flights daily were expected, it was teamwork between the radio operator, the station Agent and the gasoline truck operator. The ground time at these small stations rarely exceeded fifteen minutes and a dispatch message concerning the flight would be quickly sent to the next expected station stop with the pertinent details concerning the passengers, baggage and registered mail etc. A clearance message had to be received giving the flight clearance to the next control area with the fuel allotment and alternate airports.

The radio operator stood eight hour watches and was specifically responsible for position reports (P.R.) of aircraft in his sector. This P.R., consisted of the time over, altitude over the check point and the expected time and altitude over the next check point. The PR's were immediately sent to the nearest CAA office and Flight Control Headquarters in the sector. If a plane did not report over it's expected position report check point it was the responsibility of the radio operator to call the craft and determine it's position corrected PR.

Clearance messages for departures were originated by the Flight Control Center responsible for the flight and this message took highest priority. It was transmitted by radiotelegraph and had to be received by the station to which it was addressed within a certain time limit. These messages were called RX or RED's.

A telegraph operator had to service each message being transmitted to indicate the call letters of the receiving station plus the receiving operator's sign, date and time. Most of this could be accomplished in the sending of the preamble.

An expert telegrapher could "Stuff" message blanks while the sending operator was giving the preamble at a rate of between 30 and 40 WPM. He had to be able to copy at least six or eight words behind the transmitting operator to accomplish this.

Occasionally, during peak traffic loads, a Kleinschmitt (perforated tape) transmitter would be employed when radio conditions were good. The transmitting operator had to "know" that the man on the receiving end could take this without error.

Several of the old timers at Burbank (KGUR) were so proficient they sometimes copied reservations traffic directly on the teletype machine to Reservations, eliminating the re-transmittal ordinarily carried out by the teletype operator.



KGUR.

BURBANK-GLENDALE

Olin D. Haley "HY" is operating CW/Phone while Harry P. Miller "HP" is working straight CW. The dispatcher in the background is in constant telephone communication with Air Traffic Control.

**
Note the HRO receivers in the racks and the remote receiver/transmitter dialing panels in the center. All phone transmitters were activated by foot switch and the CW transmitters activated by blocked-grid keying to permit full break in operation.



WAMR

NEW YORK

WAMR - AAL - LA GUARDIA

Overall View Station - 1940

American moved their headquarters from Newark to LaGuardia Airport in the latter part of 1939 into three new hangars which housed the General Offices; Flight Control and Maintenance. Great pride was displayed in the Communications and Operations quarters. Here all Flight Control, Dispatching and Meteorology sections were situated.

Communications had provision for three radiotelephone positions which were concerned with the aircraft in flight between Air Traffic Control Sectors. At times of peak traffic load it was possible to man three radiotelegraph positions. A central patching control board was situated conveniently for distribution of receivers and transmitters to their appropriate circuits. At least six teletype machines occupied the center of the Communications room with the pneumatic tube and message handling facilities close by. Receivers at LGA were located remotely at Jamaica Bay and the transmitters opposite the airport on Riker's Island.

The great bulk of the traffic was connected with reservations and this and operational messages were handled by radiotelegraph prior to 1941.

(Continued on Page 28)

AMERICAN AIRLINES INC.

COMMUNICATIONS CENTER - BURBANK/GLENDALE

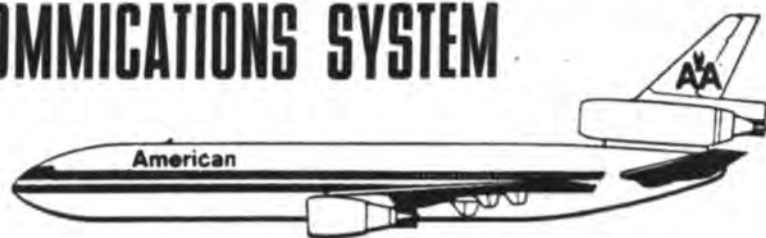
1939

This compact and efficient Communications center illustrates the classic combination Radiotelegraph/Radiotelephone operators at work on AA's Western Terminal on AM-4.

A HISTORY OF THE AMERICAN AIRLINES COMMUNICATIONS SYSTEM

Otto H. Schmidt "CY"

(Continued from Page 27)



The history of American Airlines communications would not be complete without mention of "CY" and the long service he rendered to this company and the hundreds of radio operators working for the system.

Otto was born February 6th, 1907 in Chicago, Illinois. He joined the U.S. Navy at age 16 and immediately signed up for Radio Operator training school. Upon completion of training at Norfolk, Va., he was sent to Hampton Roads training station for an additional six months as a Junior instructor and after four years in the Navy, achieved the rating of Radioman 1st class, which was no mean feat in those days.

Following his discharge from the Navy in 1927, Schmidt began a long civilian career in radio and served in various capacities in several fields. A stint as a studio broadcast engineer at station KYW Chicago and then as a technical writer for Citizens Radio magazine followed. He served in the U.S. Merchant Marine as a wireless operator on tankers and freighters, along the coast, which included service aboard the S.S. Swifteagle and the S.S. Malton. He also worked as a combination radio operator-clerk and steward aboard dredges and tow-boats for the U.S. Corps of Engineers on the Mississippi River for the magnanimous salary of \$100 per month!

Otto joined American Airlines on August 22nd of 1935 and remained with them until November 11th 1947. During his service with AAL he worked as radio operator, Assistant Chief Radio operator and Flight Radio Officer with the Air Transport Command operation until cancellation of that contract in 1946. Schmidt then entered the General Office in New York, where he served as supervisor of Radio Operator Training for teletype and telephone operators.

While at Chicago, Schmidt became president of the Airline Communications Employees Association and negotiated the first labor contract for Radio and Teletype operators for American Airlines as well as Northwest Airlines; Mid-Continent; Penn Central; Chicago & Southern and Braniff Airways.

The skill and leadership which "CY" possessed was widely respected around the system and his concern for the rights of radio operators caused him to be the champion and supreme delegate in matters concerning labor contracts with the top brass of AAL. He, along with Bill Helken and Ivan Roland represented the AICEA at the historic signing of the first labor contract in 1941 with president C. R. Smith.

When "CY" resigned from AAL in 1947 he went into the restaurant business briefly in Indiana and then joined the Indiana State police as a radioman.

In 1954 Schmidt abandoned radio operating and moved to Irving, Texas where he still lives and operates a Real Estate business.



SIGNING OF THE HISTORIC ALCEA CONTRACT - 1939.
Standing: L/R. Robt. Blanton, Delos W. Rentzel.
Seated - Otto H. Schmidt, C. R. Smith, President AAL.

Early Day Equipment Xmtrs

In the early days of radio communication, in the AA system, the Western Electric Model 9 was widely used at ground stations. This transmitter was usually coupled to a Marconi or Windom and in many instances a simple dipole fed with a twisted pair for the feed line. The Windom antenna worked amazingly well in the medium H.F. range from 6 to 10 Mhz. After 1936 some rhombic antennas were erected at Ft. Worth; Chicago and Burbank to give more reliable trans-continental coverage.

During the late thirties, the Westinghouse "CI" and Bendix transmitters were incorporated at many stations replacing the W.E. Model 9. Chicago and other stations began to install the Collins 16-F which was a very reliable transmitter. At the end of the thirties, the Collins 1000-B transmitter was used at New York; Ft. Worth and Burbank. It ran 3 KW input and coupled into the rhombic antenna; it gave excellent coverage over the entire system. By 1941, New York (WAMR) and Ft. Worth (KGTF) used two of these 1000-B transmitters.

The Receivers

The National SW-5 receiver was one of the first commercially made receivers used in AA's communication system. It incorporated plug-in coils and stayed in service until replaced by the National HRO in 1935. The HRO's were used almost exclusively until gradually replaced by the AA designed remote receivers, under the supervision of Mr. Bill Mellor, Chief of Engineering. These rack mounted receivers used six or eight crystal controlled super heterodyne circuits with frequency selection from the operating position by means of a telephone dialing system. The beat frequency oscillators could be varied from the operating position in the same method.

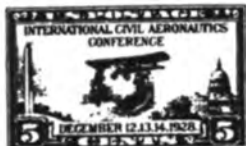
The larger installations had their transmitters and receivers at separate site locations several miles apart to permit full break-in operation.

(Continued on Page 29)



Otto H. Schmidt - President of Airline Communications Employees Association, at WSDG Chicago 1937.





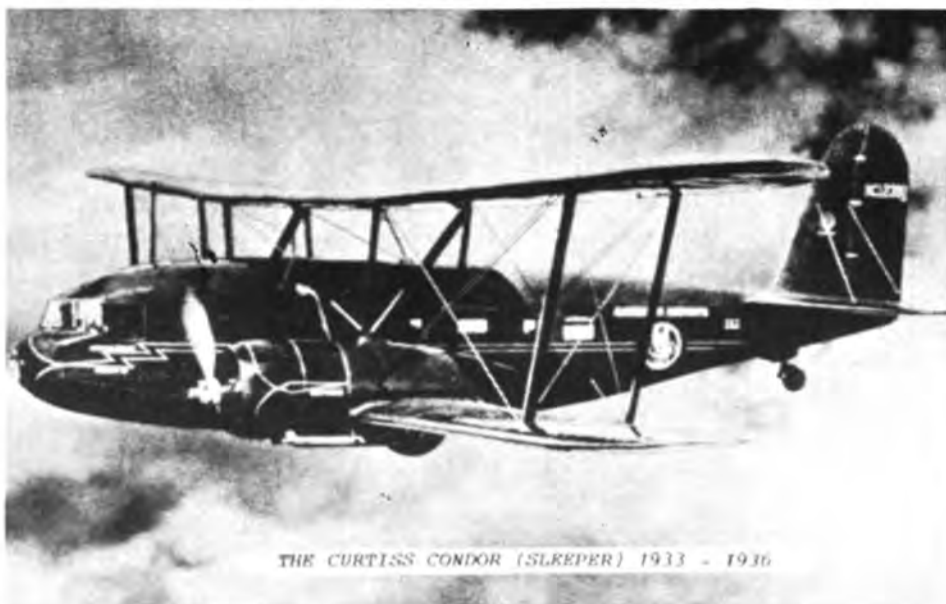
The Stations



AMERICAN AIRLINES COMMUNICATION SYSTEM - 1940

CALL LETTERS	STATION	DESIGNATION	MODES
WAMR	NEW YORK	NY	ALL
WAEV	KNOXVILLE	KX	ALL
WAWB	TRI-CITIES	TI	ALL
WNEH	WASHINGTON	WA	ALL
WOAI	DETROIT	DO	PHONE
WSDC	NEWARK	NK	ALL
WSDF	LOUISVILLE	LV	ALL
WSDG	CHICAGO	CG	ALL
WSDH	NASHVILLE	NA	ALL
WSDI	CINCINNATI	CC	ALL
WSDD	BOSTON	BW	ALL
WSDK	MEMPHIS	PS	ALL
WSDM	ALBANY	AZ	ALL
WSDO	BUFFALO	BJ	PHONE
WSDP	COLUMBUS	CO	ALL
WSDQ	CLEVELAND	CV	ALL
KGTF	FT. WORTH	FV	ALL
KGTV	BEAUMONT		WX STN BAT/GEN
KGUA	EL PASO	EO	ALL
KGUD	SAN ANTONIO	JR	ALL
KGUE	BROWNSVILLE		50 watts NO CW
KGUF	DALLAS	DL	ALL
KGUG	BIG SPRING	BZ	ALL
KGUH	WACO	WC	PHONE/CW
KGUL	ABILENE	AP	PHONE/CW
KGUM	GUADELOUPE		WX PHONE/CW
KGUN	DOUGLAS	DS	PHONE
KGUO	TUCSON	TZ	PHONE
KGUP	PHOENIX	PH	PHONE/CW
KGUQ	INDIO	IO	PHONE/CW
KGUR	BURBANK/GLENDALE	BU	ALL
KGUS	BLYTHE		PHONE/CW
KGUT	ST. LOUIS	LS	ALL
KGUU	LITTLE ROCK	LI	ALL
KIOO	OKLAHOMA CITY	OL	ALL
KIOT	TULSA	TS	ALL

Early Day Aircraft Flown



THE CURTISS CONDOR (SLEEPER) 1933 - 1936



American Air Lines
Lambert Field, St. Louis
THE DOUGLAS DC-3 1935 - 1942



THE FAIRCHILD F-10 "PILGRIM"



FORD TRI-MOTOR 1929 - 1933

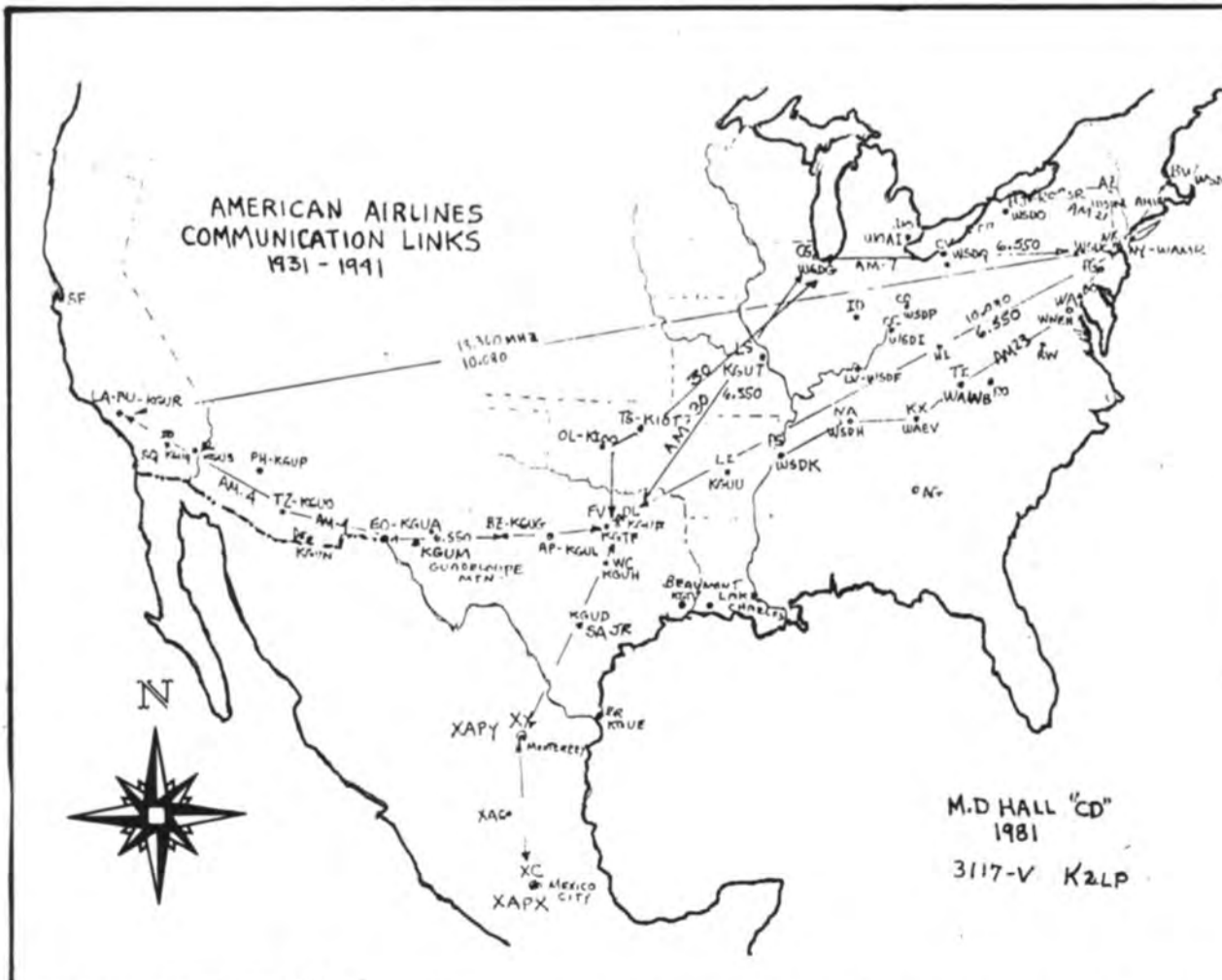


KGUR

AAL. STATION "KGUR" GLENDALE, CALIFORNIA

1935

OLIN D. HALEY K6DB - AM-4 COMMUNICATIONS



The Story of RECOLLECTIONS OF

James G. Flynn



The Early Days

RECORDED BY

Marvin D. Bud Hall

HISTORY OF AMERICAN AIRLINES COMMUNICATION SYSTEM

"JG" was raised in Galveston, Texas. He obtained a radiotelegraph license in 1923 when he was 14 years of age, then shipped out as a "Sparks" in 1924, on the SS PAUL H. HARWOOD, plying between Galveston, Tampico and Boston. This ship used a 1/2-kW Kilbourn & Clark spark transmitter and an IP-501 receiver. He also served aboard the SS E. B. CONNELLEY/KQB and the SS MARY LUCKENBACH/KBLX. In 1927 he served aboard the SS EDMORE/KEBF. Jim graduated from high school in 1927 but continued to go to sea in order to finance his college education at Rice Institute, during the summer months. In 1929 he was required to attend an extra semester at Rice in order to graduate with the class of 1930. While he was attending Rice he held down a job with Texas Air Transport, travelling between two locations on a Harley-Davidson motorcycle. After graduation he took a train to Ft. Worth and was hired by M.B. Andrews to begin as a radio telegrapher for American Airways. He immediately flew to El Paso on a Fokker to relieve "Red" Waldron for vacation.

At El Paso, Jim met Ben Fidler who worked for Standard Airlines. He and "BN" became long-time associates in the airline business. Standard Airlines flew similar equipment to American Airways; the Fokker "Super Universal. They were flown between El Paso and Los Angeles in those early days.

At the end of March, 1930, "JG" was offered a job with the Firestone Rubber Company in Akron, Ohio. He promptly set out for there to assume the job with Firestone as radiotelegrapher. The company had large interests in Monrovia, Liberia and maintained daily CW schedules on 21 MHz. The traffic was heavy, consisting of messages in coded groups. As a heavy industrialized area, Akron proved to be a poor radio location.

Firestone required its employees to punch a time clock. Work dwindled from six days a week to three in the depression years. At 75¢ an hour this was hardly enough to live on so "JG" and his wife decided it was time to leave and get back to Dallas. In August, 1930 they set out in a Model A Ford and were glad to see the last of Akron.

During the summer of 1930, some of the other operators working for American Airways were Bob Hardeman "HD," Tom Sanders "TJ," and Geoff Rayburn "HX." These men were pioneers in the airline communication business and were leaders on the giant system soon to be known as American Airlines.

About Christmas time of 1930, "JG" was sent to Atlanta where he worked as a combination radio operator/radio mechanic, trouble-shooting motor-generator and ignition noises in the Ford Tri-Motor and the Fokker. This was a considerable problem with these planes. Meanwhile "TJ" was operating at New Orleans and "HX" at San Antonio.

In May of 1931, Del Rentzel "RL" joined American Airways at Atlanta where he became second operator. He was just out of the Navy and destined to make rapid progress in the AA system.



AAL - ABILENE, TEXAS - 1931 - KGUL
Marshall McCrea - Station Manager
Olin D. Haley "HY" at mike.

Receiver - National SW-5 Cat - Mix Xmtr - WE 9

At this time all radio communication was point-to-point CW; there was no radio contact with the aircraft. M.B. Andrews built most of the existing transmitters using UV-204 tubes in self-excited oscillators. There were no MOPA or crystal oscillators in use as yet. The first commercially available telegraph transmitter was the Western Electric Model 9A. However, Herbert Hoover, Jr. had been building some self-excited oscillator transmitters for Standard Airlines which were experimented with at Phoenix by Ben Fidler and Charlie Messman. Ben's 40-meter CW ham rig proved to be more worthy; they got away with using this for several months before the DOC clamped down on them. During the late spring of 1931 Ben Fidler "BN" was at El Paso, McGeorge at Douglas and Haley at Burbank/Glendale.

The day and night frequencies were paired up to cause the least adjacent-channel interference. The receivers of this period were all National SW-5 TRF jobs; Hammarlund models came in later.

In the summer of 1931 a major change took place in the Company organization. American Airways was owned by the Aviation Corporation. The Southern Air Transport Company was divided into three divisions: The Southern Division (based at Dallas) which operated the Dallas-AG route to the east, and the Dallas-LA route to the west, also the Dallas-Memphis-Nashville (Murphreesboro) route to the northeast. The Northern Division was based at Chicago and was concerned with Chicago-Detroit-Cleveland-Buffalo route. The Eastern Division was based at Newark and flew to Washington. There was also the Colonial run from Newark to Montreal.

Clayton Shandraw was superintendent for the whole outfit. He was out of the old Air Service. He was the number one man of the Company, based in Chicago.

In July of 1931 "JG" was based at Dallas installing Western Electric Model 9A transmitters and W.E. Model 8A receivers. Gibb was the stud duck at Dallas; he came from somewhere back east. There was much trouble with the W.E. 2B rectifiers which used 249A tubes. Shortly, Jim was sent to Shreveport to install radio transmitters, and then at Tuscaloosa, AL and Jackson, MS on the Dallas-AG route. At this time the planes were having W.E. radiotelephone equipment installed in them. Prior to this there was no communication with the airplanes and all radio was point-to-point CW operation.

Not long afterwards "JG" was sent out on the western run to clean up installations at Abilene, Big Spring and Guadeloupe Pass. The Guadeloupe setup was at Delaware Springs; it used a 3-phase Kohler 5-kW generator for power. Jim then moved on to the El Paso, Phoenix, Tucson, Douglas and Los Angeles route. There was little to do at LA; the operator there was a fellow named Payne. The installation was located at the Lockheed Airport at Burbank and then moved to Glendale.

(Continued on Page 32)

AAL STATION "KGUL"

ABILENE - TEXAS

1931



James G. Flynn

(Continued from Page 31)

Communications with the aircraft was very successful due to the skill of the ground station operators in aiding each other to obtain position reports during times of skip and other propagation problems. They were always able to come through.

In 1932 "JG" installed a radio station at Blythe which used a Kohler machine for power. Standard Airlines had had a bad accident near Beaumont CA in which the pilot (Kelsey) and a number of passengers were killed. W.E. Model 9A transmitter and 8A receivers were installed at Blythe. This station aided planes flying through the San Georgio Pass which was a treacherous part of the terrain.

The organization of American in 1933 was as follows: C.R. Smith was at the helm of the Southern Division; Gibb was superintendent of the communications office at Dallas for the Southern Division, and Harold Gray was superintendent of the Eastern Division with headquarters at St. Louis. Gil Mears was his assistant based at Newark with the Colonial Division.

In 1934 "JG" was made superintendent of the Southern Division; Harold Gray was head of the Colonial and Eastern Divisions at St. Louis. About this time Jim and his family were sent to Chicago when the operation was consolidated. Harold Gray was manager of equipment and engineering, and Flynn was head of communications. Hugh Smith was operations manager and Ralph Damon vice-president of operations at Chicago. Shortly thereafter Jim replaced Shandraw as superintendent of the entire system as management was dissatisfied with the operation.

About this time the Douglas Aircraft Company was coming out with the DST and DC-3 airplanes. A big push to standardize the airplane equipment was being made by the airlines; a Bendix transceiver was ordered by many of the companies. "JG" did not approve of this equipment as it was too limited as to cross-channel operation. Many of these companies did install the Bendix however. Collins Radio was developing a Model 17F ten-channel unit at this time. It was crystal controlled and all the day and night frequencies such as 5602, 5612 and 5655 were easily accommodated. The Douglas Company had built a prototype DC-4 which had a triple tail and was larger than the later version DC-4 which was widely used during the war. Western Electric had built a model 10A transmitter for this craft which ran from an 800-cycle AC APU unit built into the tail. This prototype was the only one built; it was not used again. Jim did not like the 10A transmitter although he thought the receiver was a cracker-jack. The Collins 17F was a good transmitter which put out about 175 watts. Collins Radio was also developing the 180-S3 automatic antenna tuning unit which was not yet ready for the first batch of DC-3 aircraft used by American.

In 1938 Westinghouse transmitters were used for Point-to-point operation between Newark and Chicago, and also at Washington, Nashville, Memphis, Ft. Worth, El Paso, Phoenix and Los Angeles. There was much trouble with this transmitter; it had relays in the r.f. section which became stuck. Often the only way to overcome this was to kick the side of the rig!

The traffic load in 1938 became so heavy between Newark and Chicago and between Newark and Boston that something had to be done to relieve this congestion. Paul Goldsboro of the FCC was pressing to release CW frequencies to other services. The first teletype circuits were installed as a test between Newark-New York-Chicago and then extended to Boston. The ARINC and FCC were interested in replacing the HF gear with VHF.

American moved its headquarters and operations to LaGuardia in the latter part of 1939. Del Rentzel "RL" was assistant superintendent to "JG", and Gil Mears "VQ" was superintendent of telephone and teletype for the entire system. New Collins Autotone transmitters (1000-B) were installed at Jamaica Bay and remotely controlled from the hangar by a telephone-style dialing system. The 1000-B Collins had two r.f. units, one power supply and an a.m. modulator; it had an output of about 2½ kW. The receivers at LaGuardia were located on Riker's Island and were crystal controlled. The bfo was also variable from the operating position so that the pitch of the CW signal could be changed at will.

As early as 1938 the airlines had been testing AM and FM transmitters on the aircraft routes to explore the effectiveness of a reduction of interference and fading on these two common modes of transmission. Up to this time and for several years later, clearances from Air Traffic Control were dispatched through the individual company's radio communication network directly to the airplane in flight. It soon became evident that another system was needed to control traffic: this would be by means of VHF AM transmission to the CAA/FAA controller. Interference and fading were no longer a factor in the VHF part of the spectrum.

Early in the war, Mr. Flynn joined the Air Force as a colonel. He continued in that branch of the service throughout the duration of the war. After the war, communications in the airlines had changed drastically; all the point-to-point CW was eliminated. Teletype had completely done away with the telegrapher at American Airlines.

Jim Flynn left American in the early 50s; with the advent of commercial side-band voice communication he joined Collins Radio.

He is still active on the amateur radio bands with the call sign W5Z0.

- M. D. (Bud) Hall K2LP
SOWP 3117-V



AMERICAN AIRLINES - BOEING ASTROJET

- FRO'S -

They Made History

Robert J. Gleason

FLIGHT RADIO OFFICERS

It seems to me that after the true pioneers and experimenters, the FRO's can be divided roughly into about five groups, though admittedly with considerable interlocking.

1. The Adventurers. There were many of them who embarked on pioneering flights. From all of these, I would choose five.

First the three Navy radiomen who went with the NC-1, NC-3 and NC-4 in 1919. It should be noted that the NC-4 reached the Azores and successfully crossed the Atlantic only because of Rodd's bearings and the fact that Commander Read trusted in them.

Second, Birger Gottwaldt who maintained communication throughout the very long flight of the dirigible Norge from Spitzbergen to Teller, Alaska in 1926.

Third I would choose Giuseppe Biagi's superb performance as FRO on the Italia's ill fated trip in 1928 which ended in disaster. Not one man would have been saved but for the work of Biagi. After the crash he repaired the emergency transmitter and sent the SOS which was at last heard in Russia and the search begun. However, even aircraft which flew within sight of the marooned men could not locate them until the Italians sent an airplane with an FRO who communicated with Biagi so that Biagi could direct them to the "Red Tent".

Fourth, I would choose James Warner FRO aboard the Southern Cross on her flight from California to Australia in 1928. Warner contributed vitally to the success of the flight not only by maintaining constant communication but by obtaining position reports and bearings from ships. This was truly a great wireless flight. (See "The Flight of the Southern Cross".)

Fifth, I select not a professional radioman but a courageous skilled woman who was taught to be a radiotelegraph operator by none other than our beloved Bill Jarboe. Anne Lindbergh proved herself a capable FRO and contributed greatly to her husband's successful flight from New York to the Orient via Point Barrow, Alaska in 1931 using the then standard PAA low power radiotelegraph equipment and trailing wire antenna. Then in the same single engined Lockheed Sirius monoplane (rebuilt) the Lindberghs flew the North Atlantic to Europe, on down to the west coast of Africa, across the South Atlantic and home to New York. Every radio operator who reads her book "Listen the Wind" will agree that Anne Lindbergh truly understands the feeling between radio operators operating under vital and difficult conditions.

2. The European FRO's. They may have been the first professional operators who took to flight. With the European system of ground direction finders on low frequencies the FRO became a critical link in aerial navigation during bad weather. A special set of Q signals was developed for their work. Robert Chandler's book "Off the Beam" is the best one I have read covering some of this early work.

3. The American FRO's. Starting in 1927 with Pan American Airways, the U.S. FRO came into the picture rapidly. I hope Pete Fernandez is covering the initial work in the Carribean which expanded into Central and South America, including NYRBA for a short time, then with Panagra covering the circumference of South America. Next Pan Am tackled the Pacific with

its tremendous overwater jumps. As you have covered in the Jarboe issue of the Journal, Bill Jarboe was the FRO on all the Sikosky S-42 proving flights all the way to Manila and also the survey flights to New Zealand. During these pre war years the PAA FRO's were true professionals.

4. The Ferry Command FRO's. As WWII began in Europe, ferry commands were organized by both the British and Americans. The FRO's flew these flights in all kinds of aircraft, many times under hazardous conditions, across the North Atlantic and elsewhere throughout the free world.

5. THE WWII FRO's. When war came to U.S. the entire aircraft operation changed and expanded greatly and rapidly. Capable FRO's were in great demand by many airlines for their new overseas operations and by the U.S. Army Air Force and the Navy. Many radiomen were shifted from ground station service and became outstanding FRO's in the service of their country.

ROBERT J. GLEASON



This is a picture of "Bob" Gleason taken aboard the Fur Schooner "NANUK"--WKDB while locked in Arctic ice off Siberia in June 1929. Adventure was the name of the game back in the late 20's. Bob's rugged life was full of Adventure and enough to fill many books. One called "Icebound in the Siberian Arctic". Pub. 1982. Perhaps Bob has a few copies left. You can contact QTH: 3734 Ramsgate Dr. Annapolis, MD 21403. Tab \$4.95 or \$1 more in Canada.

Bob also wrote the article on Page 18 of this issue which narrates his experience as a "FRO" on one of Pan-Am's early attempts to initiate an air-route via Alaska to the Orient. We nominate Gleason also for the Hall of Fame for his early work as a "FRO". He belongs among those he writes about.
Wm A. Breniman - Editor

CHARLES LINDBERGH - L
JUAN TRIPPE - R

Juan Trippe was probably the greatest entrepreneur world aviation has ever known. Very early in life he realized the indispensable link wireless had with flying so took a course in a New York radio school to learn the code and equipment. This was followed by a course at the Curtiss flying School in Miami from which he graduated in 1917.

Trippe was gifted with a keen business sense and with adroit planning he was able to start Pan-Am - tying up in the meantime landing rights in many countries of the world. His initial operations was between Havana and Key West which he started Oct. 28 1927. Eventually Pan-Am became the largest carrier in the world.

Charles Lindbergh was called by Trippe to survey air-routes around the world. "Lindy" served Pan Am many years in the vanguard of Pan-Am's activities.





Pan Am in Alaska 1932 - 1942

By Robert J. Geason



When PAA bought Alaskan Airways and Pacific International Airways and formed Pacific Alaska Airways (PAA) it was decided that they would use radiotelegraph to keep track of their aircraft.

Hugo Leuteritz sent Roy G. McKenzie from San Juan to be the communications superintendent in this small Alaskan venture. On Crosson's recommendation Mac hired me as Chief Operator at Fairbanks in August 1932. Reporting to him, and very grateful for the job in these depression times, I learned that we were going to install a single 250 watt station at Fairbanks, put the PAA standard transmitters and receivers in the single engine single pilot aircraft, with the regenerative receiver hung so that the pilot could reach back and tune it, key clamped to tubing forward, trailing wire antenna, etc.

Of course we had to teach the pilots to be radio operators, get a license, and remember to reel in that antenna! Looking back, it seems fantastically primitive—but if Anne Lindbergh could do it, surely these guys could learn and run the same gear! Anyhow, no one really objected and some took to the code very well. Robbie Robbins became an excellent operator, a few used the sets grudgingly and with difficulty.

At that time we were operating from Fairbanks to Nome, Fairbanks to Bethel, and up the Koyukuk River to Bettles and Wiseman. All routes were Star Mail contracts taken over from the dog teams, operated only during the winter and had many stops.

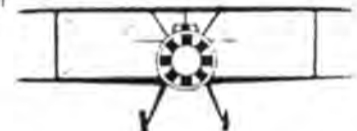
In the summer most of the same routes were flown on floats, or wheels where there were fields. In winter it was easy, but in the summer with round the clock daylight and charters to every damned place it was rough. McKenzie had lasted only till Thanksgiving when he got pneumonia and returned to Miami.

I was the sole guy, installing stuff in aircraft, servicing batteries, maintaining everything and doing the operating except that in the summer I occasionally hired WAMCATS operators to hold the fort while I slept. I must say that even this small effort was of some use for at least we knew most of the times where our planes were. Hanging that trailing wire somewhere, there was even quite a bit of communication from the ground.

This went on until the Fall of 1934 when Trippe began to give his little baby some attention. That Fall I was authorized to build a radio station at Koyuk on Norton Sound to help the pilots get over the mountains from the Yukon River to the Bering Sea. Jerry Jones flew in a Kohler plant, batteries, BNA transmitter and SW-3 receiver. I rented an Eskimo cabin, got some good driftwood poles for antenna masts, hired venturesome young Jack Stewart to live there and run it and we were in business.

Then we were told to start a run Fairbanks-Whitehorse-Juneau and that we would get two brand new Electra 10B's to begin scheduled operations in the Spring of 1935. I hired Chuck Huntley and the two of us installed stations at Tanacross, Burwash Landing, Whitehorse, Skagway and Juneau. Don Abel built the first airfield in Juneau and in April 1935, I was aboard the first Electra to land on it with Joe Barrows and Robbie Robbins pilots and me FRO. The Skagway station was soon moved to Taku Pass to help "come around the back way" from Whitehorse when White Pass, Chilkoot Pass and Chilkat Pass were closed. Everything was of course still VFR.

Next the radio system in Alaska was enlarged by installing small CW stations at McGrath, Flat and Bethel; then we built them at Tanana, Nulato and Nome, also erected our own building at Koyuk. At first, most stations were in whatever building we could find but most were replaced with our own buildings which were really homes with the radio station "in the corner". All stations in the early years had only one operator and he would open up with his



weather report and stay until the last plane was out of his area. We tried to get married couples because the wives became an indispensable part of the operation.

All stations were on HF but fortunately the transmitters would operate on 1638 KHz which is the lowest licensed frequency we had. By erecting large antennas and installing good ground systems we were able to maintain communication between each station on ground waves. In those latitudes the ionosphere was all too often in disarray and HF was often useless. We tried to get LF for point to point but people in the lower 48 did not then understand our problem. Even the aircraft used 1638 when necessary.

With the two Electras, the radio operator situation aboard the aircraft eased considerably with the copilot becoming the FRO. Then in 1938 Pan Am decided to extend the airline service from Juneau to Ketchikan and to Seattle. For this they assigned us an S-43 amphibian which was to land on the water at Ketchikan where there was still no air field. This aircraft had an FRO position and was equipped for instrument flight—though there were no ranges north of Vancouver except the experimental loop ranges put in by the Alaska Aeronautics and Communications Commission at Annette and Ralston Islands. The CAA had not yet come to Alaska. We added radio stations at Ketchikan and Seattle and I believe it was Oxsell J. (Johnny) Johnson who became our first FRO—on the S-43.

In 1940 the much larger 4 engine S-42 was put on the Seattle-Ketchikan-Juneau run and several more of the Alaskan ops became FRO's. Soon it was decided to fly the Interior route to Juneau and we built new stations at Prince George, Dease Lake and Takla Landing, B.C. This route was flown with 18 passenger Lockheed Lode-stars which were really not suitable aircraft but they did carry FRO's.

(Continued Next Page)



"Did you decide not to go, sir?"

The Early Days of Aviation Radio

By-Frank Schwella N6FS

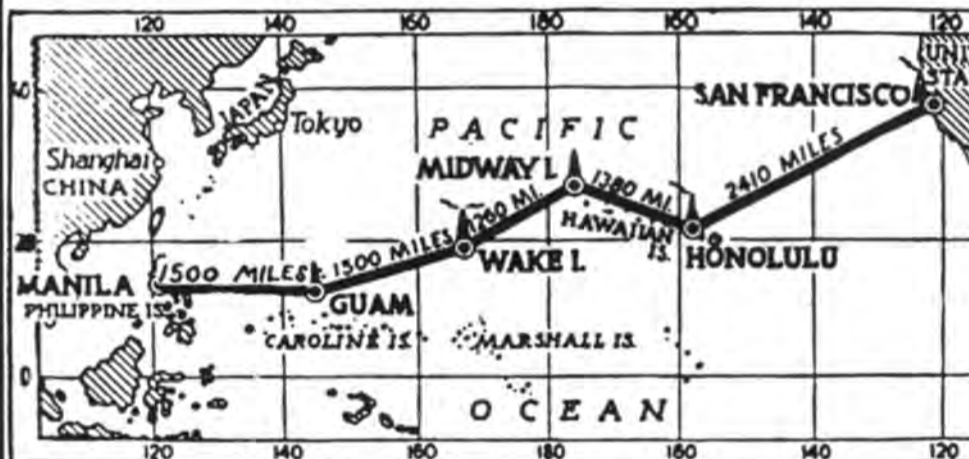
Aviation radio has come a long way in a comparatively short time. The early radios in commercial airplanes were large, bulky and mainly battery powered transmitters. Those used on long range ocean flights were CW, which required an operator.

Pan American Airways, the first commercial operators over the Pacific from San Francisco to Hong Kong used only CW in both its ground and aerial communications. This, of course, required CW ground stations at all of the intermediate stops which were Honolulu, Midway, Wake, Guam, Manila, Macao and Hong Kong. This trip required two weeks for the round trip. All of these stations required brass pounders, as well as the CW operators in the airplanes.

All of the planes on this route were flying boats and all carried flight radio officers. The radio officer's duties were quite comprehensive. In addition to maintaining all communications, the Flight Radio Officer(FRO) contacted surface ships en route, plotted their positions on his chart and took radio bearings on the ships as we passed near them, and furnished the results to the flight navigator. The navigator depended on these fixes to aid in fixing the aircraft's position. Contact was made with ships of low frequencies using a long trailing wire antenna which was reeled out and tuned from the rear of the airplane. You had to remember to go aft and reel in the antenna before landing. There was a heavy weight on the end of the wire and it was embarrassing to have to request the ground crew to replace the 200 foot plus length of wire and the weight because you left it out during landing, which left it draped over the landing area!

The FRO also took manual direction finder bearings for the pilot to use in the instrument approach into the final destination. Often it was a busy time going into a station in poor weather, getting weather reports, sea conditions in the landing area, taking bearings for the pilot and acting as liaison between the pilot and the launch that directed the landing from the water.

Route of the "China Clipper"



Pan Am Station "KNBG" Guam - Photo by Frank Schwella SOWP 1532-P

All this, of course, was done with little relief on long flights. In the early days, a flight from San Francisco to Honolulu might take over 24 hours. You soon learned to catch a short nap while on watch, filtering out the CW traffic, and waking up only when you heard the ground station send your call.

The first airplanes to fly commercially from San Francisco to Honolulu were Martin flying boats, of which the "China Clipper" was the most widely known. In addition to the "China", San Francisco operated the "Hawaii" and "Philippine" clippers.

The operating flight crew on these airplanes consisted of the pilots (one of which was the navigator), the engineer and the flight radio officer. In order to assure that we worked together as a team, the day before a trip to the Far East was taken up with what was known as a "test flight." San Francisco had a twin-engined Commodore flying boat, and the crew that was scheduled to take the next trip would take a flight around the San Francisco area, rehearsing working together, making instrument approaches, etc. This was preceded by a physical examination by the company flight surgeon. Flying to the Orient in the 1930's was an adventure!

Later we got the Boeing 314 clippers. These were indeed an improvement over the Martins, in that they were two deck airplanes and they had two flight radio officers in the crew. A further bonus was that they were limited to an 18 hour flight, so it seemed like a real gravy train to have such short flights, and two men to do the job. Also, full course meals were served at tables in the dining salon, using linen and china service.

The Boeings still used CW for communications, but they had the unheard of luxury of an automatic direction finder, which took a lot of the work from the FRO, especially on instrument approaches. We still contacted ships and plotted fixes from them to aid in the navigation. A later improvement in the radio was a low powered radiotelephone set that the pilots operated from the cockpit for the final approach to the airport.

This was all a far cry from the modern SSB transceivers now in use in commercial planes, as well as facsimile, radioteletype, etc., in use in some military transports. Soon commercial operators will have digital communications that will be entirely automatic, and the word is that the only time a pilot will use the radiotelephone is for unusual conditions.

PIONEERING ALASKA AVIATION—Bob Gleason



(Continued from Page 34)

On December 7, 1941, all these stations were in operation and were of great assistance in the initial efforts to thwart the Japanese thrust into Alaska. All our radio people have great reason to be proud of their work in the early days of Alaskan Aviation.

RJG 1983

PACIFIC ALASKA AIRWAYS

STATION	CALLS	STATION	CALLS
Fairbanks	KIFM	Juneau	KINL
Koyuk	KIMU	Ketchikan	KINH
Tanana	KIQA	McGrath	KINI
Nulato	KIMY	Flat	KINW
Nome	KINA	Bethel	KINF
Tanacross	KINC	Dease Lake, B.C.	CZ6Y
Burwash Landing, Y.T.	VEZ	Takla Landing, B.C.	CZ6Z
Whitehorse, Y.T.	VEY	Prince George, B.C.	CY6Y
Taku Pass, Alaska	KINO	Seattle	KANP

EARLY (1932-ON) OPERATORS.

Jack Stewart	Iyle Geary	Clarke Crichton
R. W. McCrary	H. B. Frickey	Harvey Gennings
Ron Greenslade	Dave Williams	N. Balke
Herb Okerlund	Carman Smith	L. G. Waddell
Bruce Hensley	Iloyd Sundstrom	I. C. Siservine
Chuck Huntley	Jim Gordon	K. S. Williams
James A. Johnson	Oxsel J. Johnson	Robert E. Ellis
Bob West	L. A. Shirts	Wil Lane
Ross Morrison	Victor Page	Bob Gleason
Tim Davis	Frank Lott	Roy G. McKenzie
	George Dana	

PILOT-RADIO OPERATORS (1932-ON)

Joe Crosson	Ralph Savory	Harry Blunt	Roy Holm
Jerry Jones	Gene Meyring	Alex Holden	*** Doepke
Al Monsen	B. B. Lien	Herm Joslyn	*** Lennon
Robbie Robbins	Bill Knox	Dick Hawley	*** Howe
Walter Hall	Joe Barrows	John Amundsen	
Murray Stuart	Ed Young	James Stewart	***ukn





FIRST 2-WAY RADIO
Developed by Herbert Hoover, Jr., right,
with encouragement of Dr. Lee DeForest,
"father of radio," left.

Saga of the Pioneer Days in Aviation Radio

Leaves from an Old Log—Kept by Elmer C. Anderson

Dear Bill Breniman:

I am a little bit late with this QSO, but in as much as you intend to run a second episode on Aircraft Radio in the Journal, I will submit this. Been a long time Bill since you and I stood on the "poop deck" of my old ship, the S.S. West Hartland in Singapore. It was in the fall of 1919. You and I are supposed to be senile old dirty men, relegated to the scrap heap, but I am glad to know that you are still championing the vicissitudes of the forgotten old "brass pounders." I am still in pretty good shape and hope you will be able to carry on for a few more years yourself.

This is supposed to be a saga of aircraft radio, and not ships, so I had better begin. I had to either quit the sea or lose my XYL. So I choose correctly. She was (passed away May 10, 1982) Thelma Chidester, relative of Drew Chidester President of the General Steamship Company of San Francisco. Mebbe some of the fellows sailed on some of the General SS ships. I thought at the time that perhaps Drew would be a good sponsor in case I ever need another ship.

It was in 1927 that I was an instructor at the old Y.M.C.A. radio school in Portland. Radio, what a term. I worked for the old Marconi Wireless Co. out of Portland and have never liked the term radio. Anyway Lloyd Simpson was the Chief Instructor. Lloyd got the job of installing the radio station at Terminal 4 in Portland and asked me to come along as operator. We had a Postal drop so I was able to use both codes. Funny it was only a few miles into Portland, but they used a Morse line instead of a telephone line from Terminal 4 to Portland. Lloyd later quit the station and went to work for the Lighthouse Service, which was the forerunner of the CAA and FCC. The Lighthouse Service, had hundreds of radio stations all over the U.S. which later became radio range stations. Lloyd went to Washington, D.C. and became a wheel back there in the old CAA.

I had wanted to get into the aviation field of radio as I could see that it was the coming thing. I had written to the old United Air Express and the Western Air Express for a job as radio operator, and one day I got a letter that there was an opening in Salt Lake City with the Western Air Express. I advised them that I would take the job and would report in 4 or 5 days. I did. Only to find that Don McRae, the operator in Salt Lake City, said he was going to quit alright, but not for a few weeks yet. Well there were no radio operator jobs in SIC, so Thelma and I high-tailed it back to Portland. Roads were bad in those days. No pavements, so it took us three days to make the trip. Back in Portland the only job I could find was night instructor at the Y.M.C.A., I took it. Three weeks later Don McRae wired me that he was going to quit and to come on down. I called him to verify this position and found that it was true. We then made the trip back to SIC again.

The radio station was in a little shack in back of the State Capitol. Winding up an old dusty road. I could see that this was no place to go to when the snow would be about 3 or 4 feet thick, so I asked the field manager if I couldn't move the station down to town and put it in my home. He had me telegraph the home station in Burbank to ask for an OK. It came back that Don McRae had tried it but couldn't make it work so best to leave it there. We had an old Leyden jar rig and as I had used the same kind of a rig on the City of Topeka back in 1920, I knew that I could make it work. I finally got the OK. The only reason I did was that a few weeks before Don McRae quit, someone had broken into the shack and stolen some radio gear.

It was in the fall of 1927. I worked my sked with Las Vegas at 7 a.m. with the weather and told them I would see them again at the next sked at 11 a.m. I loaded the rig on my 1926 Buick (wedding present from my sweet m-i-l) and was off. I installed it in my bedroom on the second floor and had previously rigged up a 35 foot single wire from an old Elm tree in the front yard. By 11 a.m. I was working Las Vegas. I think that it was Charlie Morrison who is a member of the Society of Wireless Pioneers living in Los Angeles or environs. I think that George Farmer was there at that time, also Cliff Eastman. What became of Cliff and S. P. Gibbons in Alhambra?

I had it made, I thought, when along in the spring of 1928 who should show up but a long lanky fellow named Herb Hoover, Jr. He said that he was the Chief Radio Operator for the Western Air Express. One look at my set up and he said I have to move you down to the SIC airport. He had worked up a pair of 852's in push pull and what a real rig this was. I moved and have wondered ever since what became of the old Telefuncen. Worth it's weight in gold today.

At that time there were only three small buildings on the SIC airport. United, Western and Tommy Thompson Flying School. Sometime later Tommy was flying for the United on the SF-SIC run and while going into the SF airport missed it and flew into the SF Bay. I think all were lost. I know Tommy was. I knew him well.

We were using old WW-I Jennies at that time. Western Air Express had the mail contract from Lethbridge, Alberta, Canada to Butte, to SIC to Vegas to Burbank. Some of the pilots were domiciled in SIC and when they moved from Cal. they tied their belongs over the fuselage. I remember Jimmy James, Maury Graham and couple other pilots flying into SIC with their mattresses, bed springs, etc. tied over the fuselage of the old Jennies.

One time in the fall of 1928, Jimmy James called me from Lund, Utah and said that he was down at their emergency landing field. He said that he had a call of nature and had to land. Well, he hit one of those



FRIST MAIL transferred from Air Mail Service to Western Air Express - Salt Lake City, Utah - April 17 1926.
Photo by Author - Elmer C. Anderson.

big markers at the edge of the runway and tore off a lower wing of his plane. By that time we were using a Boeing, I think 242-D, which carried 4 or so passengers. He did not have any passengers this trip. This was called the \$10,000 you know what. Jimmy lived this, the rest of his life. He finally became Pres. of the Western Airlines.

Another Pilot, Maury Graham, sometime in Jan. or Feb. 1928, while on his way from Vegas to SIC got caught in a snow storm around Mormon Mesa and went down. His plane and body were not found until around June of 1928. It had been covered by the snow and although only a few feet off the highway, could not be seen until the thaw.

The Boeings didn't work out so well, I guess, because Western Air Express bought some Fokker F-7's. Seven passenger, single engine jobs. Later they bought some F-10's, Fokkers, and they were used on all their runs. LA to SF, LA to Lethbridge. Later they used Fokker F-32's, 32 passenger planes on the LA to SF run. They had 4 engines. Two pushers and 2 pullers. The pushers didn't work out too well, they junked them. Engines kept burning up as they couldn't cool them.

Western were making Field Managers out of some of their operators and when Cliff Eastman was made Field Mgr. at Vegas I asked for one of these coveted jobs. I was told to come on down to Alhambra and they would place me. So! we bundled up our son Elmer Jr. and took everything we owned and went to Cal. November 1, 1929 I was sent to Dodge City Kansas and then over to Denver, Colo. The KC to Denver run was called the Mid-Continent Air Express. F-7's were used on this run. After about 7 months in Dodge, and still no mail contract, Mid-Continent was abandoned and I was moved to Albuquerque, N.M.

I had a lot of paper to get rid of and no garbage hauling in those days so I made a fire out in the yard. It got away from me so I called the fire dept. in Dodge. They came out and extinguished the fire so they thought. That night it started up and burned about 100 acres of a farmers corn crop. I didn't know this until after I had gotten to Albuquerque. I had to make a report and told LA (via telegraph) that the fire dept. had definitely extinguished the fire and the farmer must have set his own crop on fire for the insurance.

I recall that one day a plane was gassed (so they thought) in Albuquerque, and it turned out that they had loaded it with cleaning fluid. Well they couldn't get the engine to fire up so investigating it was found that the tanks were full of cleaning fluid, also it was found that the RR tank car with the high test gasoline (80 octane) was sitting on the siding next to the cleaning plant. Had they emptied the car, Albuquerque would probably have gone up in smoke.

Well in a couple of months I was asked to go to Big Springs Texas as Op and Field Mgr. I took it and my wife went back to Danville, Ohio to have our second son, Johnny. Big Springs proved not too good for passengers so they moved me to Midland, Texas. Still no mail contracts.

In the spring of 1930 I found that I was working for the SAFE Southern Air Fast Express as Western had sold all their planes and personnel to this company. What a deal. It didn't last long as they sold out to the American Air Express lock stock and barrel. They had gotten the air mail contract.



Western's first four pilots were dubbed "The Four Horsemen." They were (left to right): Fred Kelly, Jimmy James, Al DeGarmo, and Maury Graham. At right is Major C. C. Moseley, Western's first operations manager.



I was asked to go to a new weather reporting station at Guadalupe Mountain 125 miles east of El Paso, 90 miles north of Pecos and 65 miles south of Carlsbad, New Mexico. They had built a four bedroom house near the oil pumping station that pumped oil from Wink, Texas to El Paso. They needed the house as the planes did not fly in inclement weather and used to go down at the emergency field in Guadalupe (no town only a name) and stay until weather in El Paso was OK. Sometimes they stayed over night.

The F-10's were now equipped with radio so the pilots would call me and tell me that they would drop a paper for me every day. One time they called me when over Salt Flats, about 25 miles west of my station to tell me to watch for the paper.

I went outside as I had a long phone cord so I could hear if they called. No ship showed up so I called El Paso and informed them. I was told perhaps the pilot went down south for some reason so I stayed in the shack.

Well about two hours after the ship was due in Ft. Worth, we all gave up as we thought that something was wrong. I drove over to the nearest ranch house, about 5 miles away, and asked if I could borrow a horse as I thought that one of our planes had hit El Capitan. One of the cowboys said he would go with me.

We had to ride about 30 miles to El Capitan. We rode all over the country searching and it was getting dark. About 11 p.m. we saw a fire way up the mountain, so we eased up towards it. There was the Fokker F-10 burned to a crisp. Several passengers on it and of course two pilots. We started back and heard a moan so we investigated and sure enough there was a fellow burned all to heck, laying on the ground about 100 feet from the plane. He had cut slits in and around his eyes so he could see as he had swelled up quite badly. He kept calling for a drink of water. Where would I get water up there.

I wore a ten gallon hat so I started out with a flash light about midnight to look for water. I found some water in some old hoof prints and scooped up my hat full. When I got back I had about a cup left. This didn't appease him, so I had to go out again. I wonder if it was water?

About a month later they decided to close this station and move me to El Paso. Be it remembered that I did not get one nickle of expense money for all the moving I did while with Western and American. We were glad to get back to civilization.

The only passenger that was saved was in the hospital for about two months and one day he showed up at the airport on his way back to Los Angeles. I told him who I was and he said "So you're the guy that wouldn't get me a drink of water".

This is the only thanks I got from this fellow for saving his life. He was a Standard Oil Co. Executive on his way home from a conference back east. Does it pay to be helpful.

(Continued on Page 39)

The Early Airlines R.E.G. Davis

(Continued from Page 19)

Following Lindbergh's epic New York-Paris solo flight in May 1927, the American public suddenly decided to take to the air, and American investors quickly decided that there was a future in air transport. Many companies gave attention to carrying passengers, notably Transcontinental Air Transport (TAT), which with substantial support from the Pennsylvania Railroad, planned a remarkable coast-to-coast route.

Henry Ford had produced the first practical U.S.-built airliner, the famous Ford Tri-Motor, affectionately known as the "Tin Goose." But it was slow, cruising at about 145 km/hr (90 mph). Also, in spite of admirable progress with the Lighted Airway, a nationwide system of aerial lighthouses that guided the pilots at night, navigation across both the Alleghenies and the Rockies was still hazardous. TAT enrolled a formidable com-

bination, Lindbergh as Technical Adviser and pilot extraordinary and the Ford Tri-Motor. And for about a year beginning in July 1929, a coast-to-coast air-rail service was operated (air by day, rail, across the mountains, at night).

Despite the human and material assets, TAT lost money heavily because it had no mail contract. Postmaster General W.F. Brown, however, had been contemplating the fundamental problems and sponsored the McNary-Watres bill, an amendment to the Air Mail Act, which dramatically transformed the entire basis of airmail subsidy. Henceforth, contractors would be rewarded according to the amount of space offered rather than the volume of mail carried. This encouraged airlines to purchase larger aircraft, to add more services, and, under considerable pressure from the Postmaster General, to merge into airlines of substance.

In spite of the severe economic depression that characterized the times, the U.S. airline industry discovered its true role in transportation and flexed its muscles. Many smaller airlines merged to become the nuclei of the "Big Four": American, United, Eastern, and TWA. Under the provisions of the Foreign Air Mail (F.A.M.) contractual system, Pan American became the favored "chosen instrument" of the Post Office, quickly dominating the entire airways of Latin America.

With such a springboard for expansion at home: generous air subsidy supporting established airlines; an incentive to compete technically and operationally; and with a vigorous, subsidized airline abroad, the U.S. suddenly emerged from its air transport lethargy. In 1929 it overtook Germany to become the world's leading airline nation, a position that it has comfortably retained ever since. ■



This hangar was under construction in the Fall of 1932 at Weeks Field Fairbanks when picture was taken.

The field is now gone and the hangar on last report was converted to a bowling alley.

GLEASON - Continued

I do not know what happened next regarding Siberian flights; probably nothing. The great Martin China Clippers built for Pan Am were being tested and the U.S. Navy had asked Pan Am to set up seaplane bases at Honolulu, Midway, Wake, Guam, Manila and Hong Kong for trans-Pacific service. So the efforts of Pan Am were now concentrated on the mid-Pacific route to the Orient.

Those who pioneered the Pan Am work in Alaska had to be content to improve the interior Alaskan service, start the service from Fairbanks to Whitehouse and Juneau in 1935, and finally begin service to Ketchikan and Seattle.

Few know that the pioneer scheduled airline service within Alaska and to the "outside" started from this initial headquarters in Fairbanks and that truly the beginning of today's vast trans-polar services originated there.



The world's first strut-free all-metal low-wing monoplane with a closed cabin, the Junkers F 13, was one of the great commercial aircraft in aviation history. It was designed and built in six months and entered service in Germany in July 1919. Carrying four or five passengers in a comfortable heated cabin, it was widely used for two decades. They operated as landplanes when equipped with wheels or skis, or floatplanes when fitted with pontoons. The last one in service was retired in Brazil in 1947.

(Continued from Page 18)

Pioneer Mail Flight to Siberia Gleason

After considerable discussion and interpretation, mostly by a lady meteorologist, we came to understand that the Governor had not been advised of our coming. Even after inspection of documents Thach carried, the Governor stated that he could not allow us to proceed further until he received confirmation and approval from his higher headquarters. This he said would be obtained through their radio station. I was never allowed to see this station, although I had seen a comparable one at Laurentiya, Siberia, in 1929.

They put us up in one of their houses which were circular and dome shaped like the Native skin houses, but much different inside. The bunks were set like pieces of pie with our feet to a stove in the center. We were very comfortable and were also well fed and wined. The Russian toasting soon led even Harlee Branch, who was a teetotaler but was enticed into a little "light wine", to sing with the rest of us. We enjoyed being with all these people in this bleak, barren outpost getting ready for a tough winter which was almost upon them. Our little Fairchild was well cared for, too, but she looked a bit vulnerable on her floats on the edge of the lagoon which would soon be frozen over.

With our plane's radio I was able to communicate with Fairbanks on shortwave and advised them of our predicament but they, too, although several cables were sent to Moscow, were unable to get action. After three days without approval, it was decided we'd best give up and get back to Alaska while we could. The engine was cranked up and, under low clouds with poor visibility, we made our way across the Strait and back to Nome.

After two days at the old Golden North Hotel, we started for Fairbanks though the weather was still far from good. We did all right as far as Koyuk, then Joe had to use all his skill to cross the mountains through one of the passes with low clouds and fog forcing him to fly very low and nearly making us turn back. After scaring our passengers considerably, we got through to the Yukon River, went up to Ruby, and spent the night there with Tom DeVane. The next day we made it to Fairbanks just in time for our passengers to catch the weekly train to Seward for their return to New York.

Continued top right column



Top—Fairchild NC-10623 on the lagoon at Uelen, Siberia, after the flight from Fairbanks via Nome, September, 1934. Middle—Left to right: The Russian "Governor" of Northeastern Siberia, two officials of a Russian Polar Station expedition, and Joe Crosson. Bottom—Harlee Branch, 2nd Asst. U.S. Postmaster General, with two Russian women meteorologists and a child.



AIRLINE HOUSE FLAGS

LOGOS

Here displayed are many of the baggage labels we used to decorate our luggage in bygone days. Sorry they are not in color. Many are from Air Lines that fly no more. Member Don Thomas has kindly furnished these from his fine label collection.



(Continued from Page 37)

PLENTY OF ACTION HERE

Well the airmail scandal came along in 1934 and the Govt. cancelled all air mail contracts. We were out of a job again so we decided to go back to Portland and start life all over again. We took the shortest way via Salt Lake City. I had heard that the U. S. Army were going to fly the mail so I high tailed it out to the airport and asked for a job as radio telegraph op. I got it and worked for the U. S. Army Airmail for about 5 months. The Govt. could see that the Army couldn't handle the mail so gave the contracts back to the airlines providing that they would change their names so Western became Western Airlines, United became United Airlines, etc.

I was out of a job again so went over to the CAA and asked for a job. I took the code test from Art Johnson, 30wpm, and passed it ok. Was with the CAA for 7 years when I went to work for the U. S. Air Force as an Aircraft Inspector at the Lockheed Plant in Burbank. Was there during the war and then when war ended we were all let out. I went to work for Lockheed for \$1.04 hour as radio inspector and stayed 5 months when I read that the Flying Tigers were starting up an airline. I went over and asked for the Supervisors job and was given the Asst. as Tim Huntley was or had been made Chief. He didn't like it as he would rather fly so I became Chief. We hired 80 flight radio opera-

tors during that 12 months. Soon as they became qualified they would quit and go to work for the PAA. What a deal. Twelve months later, exactly, the Flying Tigers Airline folded and I was out of a job again. Getting to be monotonous.

I went back to the AF and asked if they were hiring and was told that they would in about 6 weeks. I told them that I had a job as radio operator on the U. S. Navy Tanker Mission Carmel (civilian crew) and would be back from Tokyo in 6 weeks. Only supposed to go to Tokyo and back. This was agreed that I would have a job when I got back. Well we were sent to Saudia Arabia so were gone 4 months. When I got back I went up to the AF again and was hired as radio inspector at North American.

I was promoted to Chief Weapons Systems and Components Branch in the District Office. I was asked if I would go to England as Contract Administrator on the "THOR" program so I took it. We installed 60 "THOR" missiles in England.

Fifteen months later we were finished so I came back to the U. S. NASA (National Aeron. Space Adm) started up so I was hired as Supervisor of radio, electronics, electric on the Apollo program at North American Downey, Cal.

I retired in December, 1965, so ends my career in radio.



FSS Those Were the Days, My Friends

By - CARL ANDERSON [D - 1938]
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At the old airway keeper station perched on a 7,100-foot peak of Donner Summit in California, working for the government was often a traumatic experience. The tower and radio shack had to be anchored to solid rock to keep them from being blown away by the High Sierra's fierce winds. For now-retired FSS employees, memories of such duty are indelible.

This nation's FSS system has its roots back in the era described above—an era when air mail flying was a sort of aerial Russian Roulette. Out of the first 40 pilots who flew the mail, 31 lost their lives.

It was apparent to everyone concerned with moving the mail by air that something had to be done if there were to be any survivors of this gallant band of air mail pilots.

That something was establishment of a chain of 17 airway radio stations to give pilots weather information and assistance of various kinds in operating from primitive early airports.

Four of these original stations—Washington, Salt Lake, Elko and Rock Springs—have been in continuous operation ever since.

Establishment of the early stations—the forerunners of today's FSS's—paid off in human lives: the 1919 fatality ratio of one pilot killed for every 114,324 miles of airmail flight dropped to one fatality for each 2,500,000 miles by 1926. And the accident rate continued to decline until the calamitous year of 1934, when inexperienced military pilots were abruptly called in to fly the mail.

Early radio stations straddled transcontinental air mail routes between New York and San Francisco as did emergency airfields and rotating airways beacons on 50-foot towers.

Ground personnel in 1927 consisted of 45 radio operators, 14 maintenance mechanics and 84 caretakers. Besides the 17 airway radio stations making up the basic system, there were a number of intermediate "airway keeper stations" with low-power radio marker beacons. The entire operation was administered by the Lighthouse Service of the Department of Commerce.

Radio telegraphy was used exclusively, being cheaper than leased wire telegraphy and more dependable than voice radio. No radio communications were air-to-ground. Acceptable transmission speed for the "CW" Morse code was 30 words per minute, but 40 to 45 words was not uncommon.

When not transmitting aeronautical information, radio lines were open for other government business. Party-line gossip and neighborly messages found their way into the system, linking all participants into a kind of family relationship.

Station operators made their own weather observations and forecasts. Additional observations were phoned in by part-time weather observers, and pilots would pass on inflight observations after landing.

These early stations generally were staffed by a lone operator who worked seven days a week and stood split shifts to accommodate the dawn departure and dusk arrival schedule for the mail planes. The typical operator rose at 4:30 a.m. and began preparations for the morning flight by radioing checkpoints along the route for weather reports. At the same time he would report his local conditions to other callers up and down the line.

By 8:30 in the morning the station operator would usually have completed all his calls and seen his pilot off the ground, shooing stray cattle off the airstrip, if necessary, helping sort and stow the mail and looking after supplies. He was then free until about 4:30 in the afternoon, when he stood a second four-hour shift, servicing the arriving daylight flight and the departing night flight.

If a landing in darkness or poor visibility was anticipated he prepared to light the airfield with the best means at hand — automobile headlights, oil drums, flares, etc. Snow drifts often had to be cleared from the runway and runway edges frequently needed delineation in the form of lighted markers.

If field conditions were too poor for a safe landing, the station operator had to warn the pilot, using pre-arranged signals. Many long and lonely nights were spent waiting anxiously for the husky roar of a Liberty engine . . . that sometimes never came.

Typical starting salary for early station attendants was \$1,200 a year. Raises were modest and infrequent and overtime was unpaid. By comparison, pilots earned a base pay of \$2,000 a year with mileage bonuses.

Maintaining remote stations called for a high degree of ingenuity, a tolerance for isolation—and at times the agility of a mountain goat. Skis, sleds and snowshoes were standard operating equipment during the long winter seasons. Shelters were prefabricated wooden huts, drab and drafty and furnished strictly for utility, housing one to four men.

In 1938, the Airway Radio Station was re-designated "Airway Communication Station", under the newly created Civil Aeronautics Authority (the Civil Aeronautics Administration of the Department of Commerce). By this time, thanks to air-to-ground radio capability, station operators could actively participate in the control of a flight in progress, giving the latest weather reports and helping lost pilots identify local landmarks and find their bearings.

The term "flight service station" came into use with the creation of the Federal Aviation Agency in 1958, and has continued to the present day, when FAA is the Federal Aviation Administration of the Department of Transportation.

Today's flight service station specialist no longer is required to lead the rugged pioneer life of his predecessors in the Air Mail and Airway Radio Stations nor risk his life propping balky engines on frozen fields, or riding in the mail compartment of open biplanes. But his dedication to the safety of pilots who seek his assistance is as strong as it was half a century ago. And he is still the person most pilots rely on for flight planning data, for guidance over unfamiliar terrain, for steady reassurance when they get into trouble. No one who has ever been caught in a light plane in a violent thunderstorm, or become disoriented in fog over hazardous terrain, or run low of fuel in pitch darkness, can forget what it is to hear a calm steadying voice over the radio receiver leading him out of agonizing uncertainty and down to the firm green earth.

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